

HELPING YOUR BUSINESS GROW INTERNATIONALLY



Directory of UK Decommissioning
Technologies and Capabilities
– Proven in the UK and overseas



I am delighted to introduce this Directory of UK nuclear decommissioning expertise.

The UK nuclear industry is one of the most established and advanced in the world. By virtue of being one of the earliest countries to develop this technology, the UK has acquired a wealth of experience and is an international leader in nuclear decommissioning, radioactive waste management and site remediation. The UK employs 60,000 highly trained workers, providing a wide variety of nuclear skills ranging from plant operations, specialist engineering disciplines and expert knowledge of regulatory requirements, through to project management, scientific and cutting edge research programmes, and first class safety and systems expertise.

The Nuclear Decommissioning Authority (NDA) is the strategic authority that now owns the 19 sites and associated civil nuclear liabilities and assets of the UK public sector. It is currently managing an annual £3bn programme of work to operate, decommission and remediate these sites. Site facilities range from nuclear reactors, large fuel processing and reprocessing plants, to waste retrieval / processing plants, research facilities and radioactive waste disposal facilities. Baseline decommissioning plans have been established for all of these sites. In this co-ordinated approach, innovation in both technical and organisational matters is rewarded, and experience shared throughout the industry. This is why the UK has become home to many of the world's most prominent nuclear companies, with a developed, mature and flexible supply chain.

Many valuable lessons have been learned over the last 20 years. These clean-up programmes have provided UK companies with experience in dealing with all aspects of the safe and efficient clean-up of nuclear facilities. No single model or approach has been applied, and instead, different commercial models and structures have evolved through refinement over time. We are still learning. There are many areas that can be highlighted as success stories, and equally many other examples that have been extremely challenging. Decommissioning and clean-up of the UK's first generation of Magnox power stations (and associated plant such as shielded caves, cells and spent fuel ponds) is well advanced. Additional programmes have seen the clean-out, decontamination, dismantling and demolition of higher hazard nuclear facilities at sites such as Sellafield, Dounreay, Harwell, Winfrith and Capenhurst.

I am glad to see so many UK companies represented in this catalogue. I hope it will be a useful publication and help identify areas where the UK can support Japan in the challenges posed by nuclear decommissioning.



Lord Green

Minister of State for Trade and Investment

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Nuclear Industry Association

The Nuclear Industry Association (NIA) is the trade association and representative voice of Britain's civil nuclear industry. It represents more than 260 companies including the operators and vendors of nuclear power stations, those engaged in decommissioning, waste management, nuclear liabilities management and all aspects of the nuclear fuel cycle, nuclear equipment suppliers, engineering and construction firms, nuclear research organisations, and legal, financial and consultancy companies.

The NIA's key objectives are to improve the commercial performance of the UK nuclear industry by assisting and supporting member companies to develop their businesses in the UK and overseas, and to improve the understanding of nuclear energy and the climate of political and public opinion in which the industry works and develops.

The Nuclear Industry Association supports a balanced low-carbon energy future for the UK including renewables, clean coal and gas - with nuclear at its low-carbon centre.

UK Nuclear Industry Association (NIA)

URL: <http://www.niauk.org>
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Contact: Peter Haslam, Public Policy Adviser
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Britain's Energy Coast

Britain's Energy Coast is the economic development organisation leading the transition of West Cumbria into an economy that will flourish in a low carbon future.

As home to the world's first civil nuclear power station, West Cumbria has developed skills and expertise over more than 50 years which can not only aid Britain's nuclear new build and decommissioning agenda but also assist other countries across the world with their nuclear plans.

Britain's Energy Coast was established in 2009 with the mission of helping West Cumbria to strengthen its position at the forefront of Britain's nuclear industry while at the same time diversify into other Clean Technologies such as wet renewable, biomass, wind and solar.

Working closely with local businesses in the energy supply chain and beyond, and the academic sector we deliver a wide range of services (detailed below) to businesses in West Cumbria designed to help them grow and prosper, while at the same time promoting West Cumbria's attributes to new export markets and to potential inward investors across the world.

We aim to create a more dynamic, innovative and entrepreneurial environment which helps to stimulate new wealth, investment and jobs that directly benefit the West Cumbrian community and aids Britain's response to the pressing challenges of climate change and energy security.

Our strategy for growth and diversification, the West Cumbria Economic Blueprint, is available to view at www.britainsenergycoast.co.uk/blueprint

Business Support: We provide a wide range of programmes and finance packages which span business start-ups to bespoke and specialist support for SME and large multinational companies operating in West Cumbria. We also provide support for businesses looking to develop new products and energy innovations.

Inward Investment: We provide a comprehensive package for inward investors ranging from financial support and assistance with integration into local supply chains to an in-depth sites and premises location service and tours of the local area to view facilities and potential partner companies. We also undertake activities to encourage West Cumbrian companies to seek new export opportunities, such as working with UKTI on the trade delegation to Korea and Japan (November 2012).

Commercial Property: We own and operate Westlakes Science & Technology Park, which is home to 70 diverse companies providing services to the nuclear and energy sectors and has a growing reputation for R&D (www.westlakessciencepark.co.uk). We also have an extensive portfolio of managed workspace in urban and rural locations in the area.

Funding for regeneration developments: Our recent projects include a new container handling facility at the Port of Workington, a state-of-the-art centre for developing traditional and new high-tech construction skills, and an office block for Sellafield workers in Whitehaven Town centre.

Britain's Energy Coast has experience of working successfully with a range of partners at home and overseas.

These include our funders the Nuclear Decommissioning Authority; Nuclear Management Partners and their component companies URS, Areva and Amec; Sellafield Limited and members of their global supply chain, which employ around 2,000 people in West Cumbria. Other companies include Tata Steel, REACT Engineering, Westlakes Engineering, James Fisher Nuclear, PacTec, Par Systems, Forth Engineering, National Nuclear Laboratory, Dalton Institute and local companies with a growing global reach such as TIS Cumbria Ltd and Safety Critical Analysis Ltd.

We have also developed strong relationships with the UK Government, in particular the Department of Energy & Climate Change and the Department for Business, Innovation & Skills. Both departments gave their full endorsement to the West Cumbria Economic Blueprint, expressing the national importance of our work and the work of those West Cumbrian businesses that will help to deliver the strategy.

Britain's Energy Coast

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Fax: +44 (0)1900 67587
Email: info@britainsenergycoast.co.uk



Nuclear Decommissioning Authority

The Nuclear Decommissioning Authority (NDA) is a Non-Departmental Public Body (NDPB) set up under the Energy Act 2004 to ensure that the UK's 19 designated civil public sector nuclear sites are decommissioned and cleaned up safely and efficiently. Each of our 19 sites is operated by one of six Site Licence Companies (SLCs) under contract to the NDA. SLCs are responsible for day-to-day operations and the delivery of site programmes.

Sellafield Ltd

The Sellafield site has been operational since the 1940's and is home to the world's first commercial nuclear power station – Calder Hall. Today the site encompasses a wide range of nuclear operations, including the decommissioning of redundant buildings, spent fuel management (with both Magnox and Oxide Fuel reprocessing facilities), and the safe management and storage of nuclear waste.

Sellafield Ltd, and its supply chain, has a broad range of capabilities, from the operation of nuclear plants, through decommissioning, waste management, and the full spectrum of supporting activities (engineering design, strategy development, safety case development and project management). The site has significant experience in radioactive waste management and the management of legacy waste forms. This experience has included the processing and management of aerial and aqueous waste discharges throughout the site's history.

Sellafield has well-established and positive relationships with many Japanese nuclear companies, built up during the last 50 years. These relationships have covered such topics as spent fuel reprocessing, waste management (including returns of vitrified waste) and MOX fuel manufacturing.

Low Level Waste Repository Ltd

LLW Repository Ltd (LLWR) is a waste management company that provides services to Customers to treat and dispose of low level radioactive waste. LLWR manage the national Low Level Waste Repository in West Cumbria and oversee a national Low Level Waste Programme to ensure that lower activity waste is managed effectively.

LLWR offers a portfolio of waste and packaging services from container supply, to the treatment and disposal of lower activity wastes. The customer base consists of nuclear and non-nuclear industry waste producers including nuclear sites owned by the NDA,

public sector bodies and private sector businesses. LLWR provides services to over 30 different customers at more than 50 sites and has a reputation built on more than half a century of safe operations.

Magnox Ltd

Magnox is the management and operations contractor responsible for 10 nuclear sites and one hydroelectric plant in the UK.

The SLC is responsible for managing the generation, defueling, care and maintenance phase and final site clearance of the Magnox Reactor Fleet. The key activities are maintaining safety and security at all sites and managing the environmental impact of operational and decommissioning activities.

Across the portfolio of sites, innovative solutions are being sought to drive enhanced hazard remediation and accelerate the transition to care and maintenance. Significant conventional and nuclear safety challenges are being consistently managed and addressed. This includes dealing with the hazard presented by a number of legacy waste vaults, large quantities of fuel element debris and significant quantities of asbestos.

Activities are being combined and managed through the Magnox Optimised Decommissioning Programme which uses the 'lead and learn' concept to drive value. This approach will not only reduce costs in excess of £1 billion but shorten programmes by an aggregate of greater than 30 years.

Research Sites Restoration Limited

Research Sites Restoration Limited (RSRL) is the site licence company responsible for the closure programme at Harwell and Winfrith. Winfrith was a major centre for groundbreaking reactor development from the late 1950s to the 1990s whilst Harwell's origins go back to the dawn of the UK's nuclear industry in the 1940s.

Both sites are located in designated areas of outstanding natural beauty with Winfrith holding an SSSI (Site of Special Scientific Interest) designation. The location and desired end state for both sites have created several unique challenges in the decommissioning and restoration of the land.

RSRL's expertise has developed over many decades, from operational reactor development to decommissioning, waste management and ground remediation. Further key areas of expertise include project management, business and safety case development and waste transfer.

Dounreay Ltd

Dounreay, on the north coast of Scotland was the centre of British fast reactor research and development for four decades during the 20th century. Today, it is the biggest nuclear site closure project in the UK.

The site consists of two fast breeder reactors that were cooled with liquid metal, a materials test reactor, fuel reprocessing facilities and fuel recovery and fabrication facilities. In addition the site includes a number of laboratories and historic and current waste disposal and storage sites, all at various stages of clean-out, dismantling and demolition.

The site includes a number of high hazard areas including the Dounreay shaft and silo, legacy waste storage facilities which present unique decommissioning challenges.

Springfields Ltd

Springfields is a nuclear fuel manufacturing site and is located near Preston in Lancashire. The site manufactures a range of fuel products for both UK and international customers and decommissions historic uranic residues and redundant facilities. From April 2010, the NDA permanently transferred ownership of the company to Westinghouse Electric including the freedom to invest for the future under the terms of a new 150 year lease.

Capenhurst (Currently part of Sellafield Ltd)

Capenhurst is located near Ellesmere Port in Cheshire, adjacent to Urenco (the Uranium Enrichment Company), and has an area of 32 hectares covered by the nuclear site licence. It was home to a uranium enrichment plant and associated facilities that ceased operation in 1982. The site is currently being transitioned into Urenco ownership. This will facilitate the decommissioning of the remaining facilities, the continued management of the legacy and the securing of a sustainable future state for the site and its employees.

Nuclear Decommissioning Authority

URL: www.nda.gov.uk

Address: Herdus House, Westlakes Science and Technology Park, Moor Row, Cumbria CA24 3HU

Contact: Chris Heron, Business Planning Manager

Phone: +44(0)1925 802001

Email: chris.heron@nda.gov.uk

The Six Site Licence Companies (SLCs)

Sellafield Ltd



Parent Body Organisation:

Nuclear Management Partners Limited (NMPL)
Consortia made up of URS, Areva and AMEC

PBO Website: www.nuclearmanagementpartners.com

SLC Website: www.sellafieldsites.com

Sites: Sellafield (incl. Calder Hall), Windscale, Capenhurst

Low Level Waste Repository Ltd



Parent Body Organisation:

UK Nuclear Waste Management Limited (UKNWM)
Consortia made up of URS, Studsvik, Areva and Serco Assurance

SLC Website: www.llwrsite.com

Sites: Low Level Waste Repository

Magnox Ltd



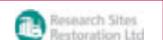
Parent Body Organisation:

EnergySolutions EU Ltd
PBO Website: www.energysolutions.com

SLC Website: www.magnoxsites.co.uk

Sites: Berkeley, Bradwell, Chapelcross, Dungeness A, Hinkley Point A, Hunterston A, Oldbury, Sizewell A, Trawsfynydd, Wylfa

Research Sites Restoration Limited



Parent Body Organisation:

UKAEA Limited, a member of Babcock International Group (BIG) PLC

PBO Website: www.babcock.co.uk

SLC Website: www.research-sites.com

Sites: Harwell and Winfrith

Dounreay Ltd



Parent Body Organisation:

Babcock Dounreay Partnership
PBO Website: www.bdpdounreay.co.uk

SLC Website: www.dounreay.com

Sites: Dounreay

Springfields Ltd



Parent Body Organisation:

Westinghouse Electric UK Limited,
which is part of the Toshiba Group

PBO Website: www.westinghousenuclear.com

SLC Website: www.springfieldsfuels.com

Sites: Springfields

Decommissioning

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Post-operational clean-out (POCO)

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Decommissioning

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AMEC plc



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
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 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Address:
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Fax:
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Andy.white@amec.com

Brief Organisation profile

Established: 1848
Capital: £3.6 billion GBP
Number of Employees: 30,000

AMEC is a focused supplier of consultancy, engineering and project management services to its customers in the world's clean energy, oil and gas, mining, environmental and infrastructure markets. With annual revenues of some £3.3 billion, AMEC designs, delivers and maintains strategic and complex assets and employs over 30,000 people in around 40 countries worldwide.

With over 50 years experience in the nuclear market, we ensure the safe and efficient operation of nuclear plants, from concept through to decommissioning.

AMEC has worked on a number of international nuclear programmes, including the construction and operation of Tokai and Monju in Japan, Bruce Power in Canada, and much of the UK PWR and Magnox fleet.

Key services include: Project management, engineering & construction services, waste characterization, front-end design and optioneering, radiological and environmental consultancy, supply chain management, commissioning, decontamination technologies, decommissioning, environmental remediation & waste management services.

Main products/services or technologies

Site management

- Nuclear site management and operational governance
- Nuclear site and technology licensing advice and consulting
- Government advisory and professional consulting

Reactor Services – Engineering & Programme Management

- Operations and maintenance
- Operational safety
- Decommissioning
- De-energizing
- Decontamination
- Reactor Support and Environmental Services

Waste Management

- Radiological waste management and repository storage solutions
- Benchmarking of repository programmes against international guidance (IAEA, NEA)
- Development and assessment of deep

and shallow repository concepts and designs, including for spent fuel, high-level and low-level wastes

Environmental Services

- Radiological contamination services
- Waste stream analysis
- On-site and off-site decontamination and remediation
- Mobile and static radiological assessment technology

Specialist Consultancy

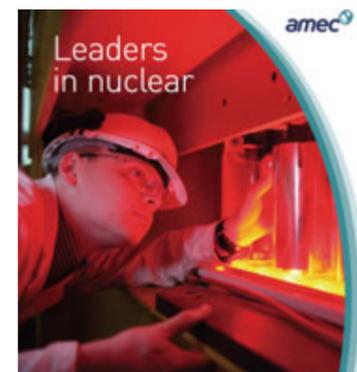
- Test rigs and robotic equipment
- ROV for inaccessible welding, cutting and investigation
- ROV 3D scanning of inaccessible areas
- Bore-hole drilling and deep sample retrieval

Nuclear re-start programmes

- Specialists in reactor re-start programmes
- Safety case and scenario analysis
- Engineering and management support

Experience/results, past clients

- Joint managing partner of the Sellafield nuclear site where the UK's spent fuel and high-level wastes are stored (UK NDA).
- Adviser to UK government on nuclear safety and decommissioning matters. (NIA)
- AMEC was chosen as the Architect Engineer company to support EDF Energy in building the new fleet of EPR reactors in the UK. (EDF Energy)
- AMEC is leading the re-start of the 'Bruce A' nuclear reactor in Ontario, Canada. (AECL)
- AMEC played a central role in the construction and operation of the Tokai power station in Ibaraki, Japan. (JAEA)
- Logistics management and cost modeling for UK spent fuel management plans (CoRWM).
- AMEC's [Scansort] and [Scanplot] technology solutions have been used to support the Fukushima clean-up efforts.



Microseismics for nuclear waste disposal containment feasibility and monitoring

Applied Seismology Consultants Ltd



>>>Products and Services

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 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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consulting@
appliedseismology.com

Brief Organisation profile

ASC specializes in providing commercial microseismic monitoring, processing and advanced analyses in a range of sectors including mining, radwaste storage, petroleum, geothermal, carbon sequestration, engineering, and laboratory testing. We are pioneering the commercialization of technologies for nuclear waste disposal monitoring with our InSite Seismic Processor software and OMNIBUS hardware range.

ASC was founded in 1997 by Prof. Paul Young. ASC is an Itasca International Company following a merger in 2009 and is the UK agent for Itasca modeling codes.

ASC has a Quality Management System certified in accordance with the standard BS EN ISO 9001:2008.

Main products/services or technologies

Repository-wide seismic monitoring setup and operation, with three dimensional network optimisation.

Acoustic Emission monitoring to detect fractures around engineered structures and delineate potential fluid pathways.

Three-dimensional ultrasonic surveys to actively examine rock to quantify damage and disturbance accumulation.

Embedding of sensors within structures, such as concrete bulkheads, to assess integrity. Validation and development of numerical models for predictive modelling of repository behaviour.

InSite software is used extensively in ASC's nuclear waste consulting operations and is now used by nuclear waste stakeholders and university research departments for in-house processing and management of seismic data.

ASC supplies state-of-the-art microseismic and acoustic emission monitoring equipment using the latest data acquisition and computing technologies to organisations in

charge of evaluating, selecting and operating deep geological repositories for radioactive waste.

Experience/results, past clients

ASC has designed and performed international microseismic, Acoustic Emission (AE) and ultrasonic monitoring projects for underground engineered structures. The technologies also provide data for validation of numerical models that predict the effects of the operating conditions over large time scales.

We have managed large EC-funded research consortia and participate in projects to advance AE and ultrasonic technologies for examining and quantifying rock disturbance and fluid pathways.

We continue to manage acquisition, and perform data processing, for long-term experiments simulating disposal of radioactive waste.

Clients include SKB, AECL, Andra, Posiva, EU.

The AREVA-Atkins Partnership UK - offering combined expertise to the UK decommissioning and fuel cycle market

AREVA-ATKINS Partnership UK



Brief Organisation profile

AREVA-Atkins Partnership UK has been established in 2012 and builds on the experience and resources from the parent companies. AREVA has 48,000 employees worldwide and ATKINS has 17,500 employees among which 9,000 are based in the UK.

Experience/results, past clients

We are providing services and solutions to all sectors of the nuclear industry to various customers including: Kansai Electric, TEPCO, Chubu Electric, KHNP, CGNPC, Duke Energy, Exelon, EDF, UK Nuclear Decommissioning Authority, Sellafield Ltd., Magnox, ...

Main products/services or technologies

The AREVA-Atkins Partnership offers a unique combination of international technology along with unbeatable design and engineering consultancy. The offering, based on the experience and expertise of its parent companies, covers all areas of decommissioning and waste management activities: engineering, construction, operations...

>>>Products and Services

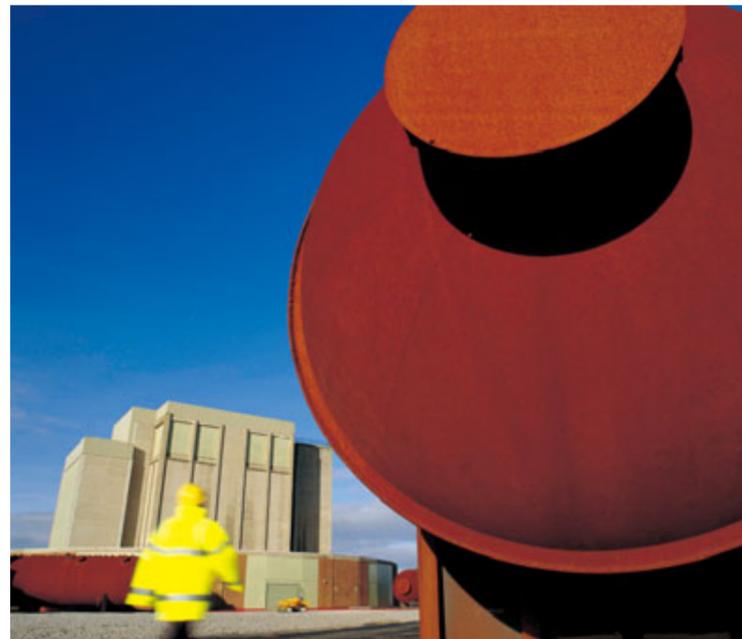
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Experts in stakeholder engagement, communication, governance, risk and sustainability –strategy development, planning; implementation and engagement delivery; evaluation and assurance

Article 13



>>>Products and Services

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>>>Company Information

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Brief Organisation profile

Article 13 are a strategic consultancy, established 15 years ago. Based in the UK, we operate globally with regional partners in Asia, Africa, Middle East and North America. We bring together global experts from our formal associate network.

We have particular experience operating within the nuclear sector (from new build through to decommissioning). Our work typically involves working alongside organisations (often acting as a critical friend) around their communication and engagement strategy and plans – international, national, regional and local stakeholders.

Main products/services or technologies

We support organizations to address the key issues facing their organization and their stakeholders.

A particular area of expertise in the nuclear sector is around Stakeholder communication and engagement

- Stakeholder and issue mapping
- Consultation engagement analysis (including engaging hard to reach groups)
- Building communication strategies based on material issues
- Activation and relationship building
- Liaising with multiple stakeholders (national, regional and local) including government bodies
- Developing, managing, delivering and evaluating stakeholder engagement programmes in a complex communications environment
- Spokesperson training
- Media relations team
- Crisis communications

Other services include

- External review and appraisal of existing programmes – what is working, what is not, how can existing programmes deliver greater

value to the business and society

- Impact assessments – including environment, social and health impact assessments (based on current baseline and with future projections)
- Strategy development – short and long-term planning
- Training / capacity building - including E-learning
- Stakeholder engagement and communications – engaging stakeholders through traditional and online media
- Behaviour change and social marketing - including social return on investment and impact analysis

Experience/results, past clients

Our experience and clients, include

- British Nuclear Fuels Limited: Worked with senior management to understand key stakeholder perspectives of the areas of future risk for the nuclear industry
- World Nuclear Association: Messaging work for the Uranium Working Group of the WNA on producing a stakeholder relevant and understandable mission and vision
- Nuclear Decommissioning Authority: Framework suppliers to the UK NDA around stakeholder engagement and communication
- International Atomic Energy Agency: engaged as an advisor for the development of Guidance on Stakeholder Involvement in Decommissioning
- NDA: Acted as the lead facilitator and process adviser for the National Stakeholder Group

Arvia™ offers a unique patented treatment process for the destruction of aqueous radioactive organic waste streams

Arvia Technology Ltd



>>>Products and Services

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>>>Company Information

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info@arviatechnology.com

Brief Organisation profile

Arvia™ has established a process for the destruction of orphan radioactive organic wastes produced in the course of nuclear power generation, decommissioning and at stages within the nuclear fuel cycle. At the heart of this process is the organic destruction cell (ODC).

Specifically developed for the demands of the nuclear industry, it has no moving parts; it is chemical free and can destroy a wide range of radioactive organic waste streams, previously thought of as orphan.

Established in 2007 the business has grown significantly in the subsequent years, developing a team of world class technical experts, scientists, engineers and support staff, which is led by an internationally recognized blue chip management team.

Main products/services or technologies

Using the Arvia patented Organic Destruction Cell (ODC) and a novel proprietary adsorbent material, Nyex the waste is treated in three simple steps:

- **Adsorption:** adsorption is achieved by the fluidisation into the supernatant. This is rapid due to the non-porous nature of the adsorbent.
- **Separation:** the loaded adsorbent settles due to gravity sedimentation and forms a compact bed between the electrodes of an electrochemical cell.
- **Destruction:** electrochemical oxidisation of the adsorbed organic contaminant is achieved by passing a direct electric current across the adsorbent bed. The organics are destroyed and converted to CO₂, CO and H₂O. The adsorbent is then immediately re-used for further treatment.

The Arvia™ process offers distinct benefits:

- Costs are reduced due to low energy usage in the process.

- Reduction of risk and cost due to treatment taking place on site.
- The resultant secondary wastes are minimal and can be disposed of via existing site disposal routes.
- It is an environmentally friendly process.

Experience/results, past clients

Arvia's Organic Destruction Cell (ODC) has won a number of environmental, engineering and innovation awards from recognised industry bodies, including the 'Rushlight Clean Environment Award 2010' for a collaborative project with Magnox Limited at their Trawsfynydd decommissioning site.

Arvia has conducted treatability trials on a number of different organic and radioactive wastes, known to be issues for the Japanese nuclear industry.

Industry recognised progress has been made in the treatment of mixed waste containing Diesel Oil, Marine Oils, Turbine Oils, Fyrquel™, PCB, TBP and PFPE (Perfluoropolyether).

Arvia's commitment to serving the Japanese nuclear industry has seen them undertake experiments on wastes containing caesium, known to be a particular problem of the nuclear industry.

Avon Protection are world leaders in CBRN respiratory protective equipment

Avon Protection



>>>Products and Services

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>>>Company Information

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Phone:
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FAX:
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Email:
shiina@micj.co.jp

Brief Organisation profile

Avon Protection is the recognized global market leader in respiratory protection system technology. An unrivalled 80 year pedigree in military mask design and manufacture has placed Avon Protection at the heart of numerous national defense and tactical Personal Protective Equipment (PPE) deployment strategies.

Avon Protection's expanding global client base now includes military forces, civil and first line defense troops, emergency service teams and industrial, marine, nuclear, mineral and oil extraction site personnel. All put their trust in Avon's advanced respiratory protection solutions to shield them from every possible threat.

Avon is also a leading supplier of high quality flexible storage solutions that meet the performance demands of military and industrial consumers worldwide.

Avon provide storage solutions for fuel, water, food grade liquids and non-hazardous chemicals using flexible transport, static, embankments and open top collapsible storage tanks.

Main products/services or technologies

Avon's latest range of products is the 50 series of masks which includes the C50, FM50 & FM53.

The C50 has been developed using the same platform as Avon Protection's successful M50 based US Military Joint Services General Purpose Mask.

The C50 offers high protection and an outstanding field of vision and superior comfort. The innovative design features optimize the user's time in the operational arena for CBRN protection.

Also, with the appropriate filter, the C50 protects against a range of CBRN threats including chemical warfare agents, toxic industrial chemicals (TICS), toxic industrial materials (TIMS), biological and radiological hazards and riot agents.

Avon also offers a CBRN escape

hood. The Avon NH15 compact CBRN escape hood, is the smallest NIOSH certified CBRN Air Purifying Escape Respirator on the market. Its low cost makes it ideal to provide support for oil and gas workers, emergency medical services and fire officers seeking immediate or emergency respiratory protection in a CBRN or H2S sour gas scenario.

The NH15 hood has a five year shelf life and provides a high level of respiratory, eye and face protection for a minimum of fifteen minutes to allow the user to evacuate from a contaminated area. Made of clear material, the NH15 protects against all airborne CBRN threats and from liquid agent splashes.

Twin low-profile filters on a unique hinge system feature the latest filtration media which reduces breathing resistance and a front reflector makes it easier to identify colleagues in low light environments.

Experience/results, past clients

Avon Protection is the global market leader in CBRN respiratory protection system technology. We have been designing and manufacturing masks for over 80 years and today we are an essential element of numerous national CBRN defense and Personal Protective Equipment (PPE) deployment strategies throughout Europe, the Middle East, Asia, Australia and the US.

Avon's expanding global client base now includes military forces, police, civil and first line defense troops, emergency service teams and industrial, marine, nuclear, mineral and oil extraction site operatives. All put their trust in Avon's superior respiratory technology to protect their personnel from all extremes of CBRN threat. That is why there is an Avon protective system for almost every respiratory threat or CBRN scenario.

Avon was awarded the Joint Services General Purpose Mask Program in 2000 supplying the M50 respirator to all US Armed Forces & Coast Guard.

Babcock is the UK's largest specialist nuclear support services organisation, employing over 3,500 nuclear engineers, scientists and technicians

Babcock International Group



>>>Products and Services

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>>>Company Information

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JAPAN

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bge-mail1@bge.co.jp

Brief Organisation profile

Babcock is the UK's leading engineering support services organisation with revenue of circa £3bn in 2012 and an order book of £13 billion.

Defence, energy, telecommunications, transport and education are all sectors where Babcock provides critical support. Our services are underpinned by three core capabilities:

- Managing Assets and Infrastructure
- Delivering Projects and Programmes
- Integrating Engineering Expertise

We take great pride in the considerable depth and breadth of our people's expertise. We have over 25,000 skilled staff workers who design, build, manage, operate and maintain assets that are vital to the delivery of many key public services, both in the UK and overseas. Our market-leading reputation is based on one key fact: Babcock is a partner which can be trusted to deliver.

Main products/services or technologies

Babcock is the UK's largest specialist nuclear support services organisation, employing over 3,500 nuclear engineers and scientists. This highly skilled workforce, combined with our experience as a nuclear site licensee and operator, enables Babcock to provide safe, effective solutions for the entire nuclear lifecycle, from design and build, through operation and maintenance, to decommissioning, waste management and remediation.

Babcock's nuclear experience includes site management and operations, design services, decommissioning and waste management, programme

management, operational support and new build.

Babcock has successfully completed some of the UK's most challenging decommissioning projects. Our decommissioning projects are supported by our radiological characterisation services, which provide an accurate analysis of the radionuclide content of waste, ensuring its safe and cost-effective disposal.

Babcock is responsible for the decommissioning programmes at Harwell, Winfrith and Dounreay, (including the Dounreay Sodium cooled reactors).

Babcock has many years' experience of radioactive waste and fuel handling, having designed and manufactured the fuelling plant on all the UK's Magnox sites.

Experience/results, past clients

Babcock has a nuclear track record stretching back well over 50 years, having been involved in the UK nuclear industry since its inception in the 1950s. We have successfully completed many major nuclear projects for customers throughout the world.

We have unrivalled experience and expertise in graphite reactor decommissioning, as well as graphite removal, handling and disposal. We also have detailed practical experience of Sodium reactor decommissioning.

We have undertaken a number of projects and provided engineering and technical support to major Japanese power utilities, while our UK customers include:

- The Nuclear Decommissioning Authority
- Sellafield Limited
- Magnox Limited
- EDF Energy

BHR Group is an independent industrial consultancy and technology organization that has provided design and testing services to the nuclear industry for over 40 years

BHR Group



EXPERTS IN FLUID ENGINEERING



>>>Products and Services

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>>>Company Information

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cshields@bhrgroup.co.uk

Brief Organisation profile

Specializing in fluid engineering technical services and knowledge transfer, BHR Group has been established over 65 years and has some 75 highly qualified staff. It draws over 70% of its turnover from helping international companies maintain their competitive edge by providing independent and impartial expert advice.

BHR Group provides research, product development, scale up design guides, testing and consultancy services to major corporations in chemicals, pharmaceuticals, nuclear, aerospace, water and waste, defense, oil & gas and energy sectors.

BHR Group has full testing and fabrication workshops at its Cranfield site and provides expert staff for secondment to clients.

Our Nuclear Industry Services provide process and mechanical engineering design, development and testing across the complete span of the nuclear cycle from generation to decommissioning and fuel reprocessing.

Main products/services or technologies

BHR Group Consultancy Services include:

- Scale up/down designs for all types of mixing equipment
- Slurry handling and pumping design including system abrasion
- Process design expertise in handling, mixing, transport and processing of nuclear slurries in fuel reprocessing
- Provision of abrasive jet cutting equipment and site training/support services
- Design and operation of mixing and jet suspension systems for difficult

to handle fluids and slurries

- Rheological services including advice on legacy waste retrieval
- Dispersion of nanoparticles
- Development and tribological testing of sealing systems
- Physical modelling of hydraulic structures and components including simulant development
- Design engineering of fluid handling systems
- Mathematical modelling including CFD and FEA
- Pipework system simulation, pressure surge and flow distribution
- High pressure hydraulics design and testing
- Unique sealing system testing evaluation facilities
- Simulation software for lifetime prediction of containment seals
- Development of novel chemical processes
- Renewable energy development

Experience/results, past clients

BHR Group has worked with 100+ international organisations including Sellafield, Sumitomo, Dainippon, BP, Idemitsu, JGC, Hanford, Mitsubishi, Dounreay, Mitsui, Elf, Dow, GSK, Nuvia, Costain.

It has provided design expertise, simulation and testing services for fuel reprocessing and legacy waste treatment plants. Its sealing expertise has been used in the design and testing of fuel transport, waste handling and optimisation of power plants.

It has developed novel abrasive jet cutting technologies suitable for hazardous, flammable and toxic environments, capable of cutting any material up to 1 mile away.

Remote Controlled Vehicles

Brokk UK Ltd



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>>>Company Information

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Phone:
+81 3 3864 4861

Brief Organisation profile

- Established: 1974
- Number of Employees: 30

Main products/services or technologies

- Remote Waste segregation packaging / sorting

Experience/results, past clients

- Reactor decommissioning / demolition
- Remote Waste management sorting packaging / size reduction
- Projects completed in America, Russia, China, UK, Sweden, Germany, France and Japan

Manufacturing high precision components in a range of metals and metal alloys for aerospace, nuclear, space and defense markets

C W Fletcher



Brief Organisation profile

C W Fletcher was established in 1891. It currently has a turnover of around £23 million per year and employs 215 people. The company is privately owned and listed as a Limited Company. C W Fletcher operates in aerospace, space, defense, nuclear and other high technology industries.

Experience/results, past clients

Current customers include: KHI, IHI and MHI in Japan either directly or through Fuji Industries Co Limited.
Rolls Royce PLC, Sellafeld Limited, Sulzer Eldim, M B Aerospace, Meggitt, Astrium, EADS and ITP

Main products/services or technologies

Machining, either milling or turning in sizes up to 2 metres in diameter. Fabrication, sheet metal work and press forming are also core skills. Supply chain management, low cost sourcing, project management and access to a range of high technology companies and universities.



>>>Products and Services

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>>>Company Information

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Email:
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We cover everything from project finance through design and construction, to life-time asset management. Our mission is to make tomorrow a better place and our vision is to be the leader in delivering integrated solutions for infrastructure, buildings and services

Carillion plc



>>>Products and Services

- ▶ **Decommissioning**
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>>>Company Information

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enquiry@carillionplc.com

Brief Organisation profile

Carillion plc is one of the UK's leading construction and support services organisations, employing around 50,000 people. Formed following a demerger of Tarmac plc in 1999, Carillion has gone on to acquire further well-known companies including Mowlem (acquired in 2006) and Alfred McAlpine (acquired in 2008).

Carillion has annual revenues in excess of £5bn and operations across Britain and in Europe, Canada, the Middle East and North Africa. We have a portfolio of award-winning work in areas vital to society: nuclear, defence, education and regeneration, power, utilities, road and rail. From first concept through design to construction, commissioning, facilities management, operational support and decommissioning, we provide safe, high quality, cost effective and sustainable solutions, tailored to the needs of our customers.

Main products/services or technologies

Civil and structural engineering and construction; building construction; project and programme management; energy services; facilities management; mechanical and electrical engineering; utility services; rail engineering; civil, structural and architectural design.

Experience/results, past clients

The companies that have become Carillion have an outstanding record of making tomorrow a better place. Here are just a few of our past projects:

- 2012 – Olympic Media Centre, London, UK
- 2009 – Yas Marina Hotel, Abu Dhabi
- 2007 – Channel Tunnel Rail Link to St Pancras, London, UK
- 2007 – Vancouver International Airport Domestic Terminal Expansion, Vancouver, Canada
- 2001 – Grand Mosque, Muscat, Oman
- 1994 – Channel Tunnel, UK-France
- 1984 – Thames Barrier, London, UK
- 1946 – Heathrow Airport, London, UK

Carillion and its antecedents have been involved with the nuclear industry since the 1950s; from the construction of Chapelcross, Hunterston A and Trawsfynydd Magnox Power Stations to numerous recent projects in support of the UK Nuclear Decommissioning Authority's mission.

Centronic is a leading international manufacturer of sensor solutions for photonic and ionising radiation

Centronic Ltd



>>>Products and Services

- ▶ **Decommissioning**
- ▶ Post-operational clean-out (POCO)
- ▶ Decontamination
- ▶ Dismantling
- ▶ De-energising & demolition
- ▶ **Waste management**
- ▶ Waste processing, conditioning & passivation
- ▶ Waste storage & transport
- ▶ Waste disposal (licensing / repository)
- ▶ **Site restoration**
- ▶ Site radiological assessment & material sorting
- ▶ Environmental remediation (land / groundwater)
- ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.centronic.co.uk

Address:
267 King Henry's Drive, Croydon,
Surrey CR9 0BG

Phone:
+44 1689 808013

Fax:
+44 1689 845117

Email:
dfairweather@centronic.co.uk

Name of distributor/agent in Japan:
For Radiation Tolerant Cameras:
ATOX CO. LTD
2-3-4 Shintomi, Chuo-ku, Tokyo,
104-0041 JAPAN
Tel: +81 3 5540 7952
Fax: +81 3 5541 2802
Contact: Fumiyuki Suzuki
Email: fumiyuki_suzuki@atox.co.jp

For Radiation Detectors:
Measure Works Corporation
1F No. 2 Harumi Bldg, 295
Yamabuki-cho, Shinjuku-ku, Tokyo
162-0801 JAPAN
Tel +81 3 5579 8108
Fax +81 3 5579 8109
Contact: Taku Arai
Email: taku.arai@measureworks.co.jp

Brief Organisation profile

Centronic was founded in 1945 and is an established detector manufacturer now employing over 125 staff in the UK and a turnover of £10 million. With a clear agenda for growth and now approaching its thirteenth anniversary as an independent company, Centronic continues to grow whilst further consolidating its already strong position as a market leader in niche engineering for the nuclear industry.

Main products/services or technologies

Centronic produces a comprehensive range of standard products that includes neutron detectors, Geiger-Müller tubes, CCT vision systems, silicon photodiodes, electromagnetic wound components and machining services.

Centronic is highly accomplished in the design, manufacturing, test and qualification of gas-filled radiation detectors for the nuclear related industries. Centronic develop integrated radiation tolerant vision solutions for nuclear and other hazardous and safety critical applications, to suit specific customer needs.

We are one of the leading detector suppliers for the world's power generation, industrial OEM, medical, aerospace and defence applications.

Experience/results, past clients

Direct and indirect customers include: JAERI, JNFL/IHI, NMCC-IAEA, TOSHIBA, CNNC, CNPE, CNPEC, JAEA, UKAEA, HARWELL, BNFL (SELLAFIELD), MEDINSHA, HITACHI, JNC, BAE, SERCO, ROLLS ROYCE, AECL/CANATOM, AREVA, EDF

Providers of specialist consultancy services and project services for safety critical systems and process control solutions

CSE-Controls Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.cse-controls.com

Address:
Suite B, Chadwick House,
Birchwood Park, Warrington,
Cheshire, WA3 6AE

Phone:
+44 (0)1925 846200

Email:
jean.isherwood@cse-controls.com

Brief Organisation profile

CSE Global Limited is an international technology group with over 1700 employees worldwide and turnover in excess of £230million. With a network of over thirty offices in twenty countries, spanning the Americas, Asia Pacific, Europe, Middle East and Africa, our qualified and technical staff operate across a number of markets including industrial automation, telecommunications, environmental and healthcare.

CSE Controls were acquired in April 2000 and are widely acknowledged as a market leader providing Safety Systems, Protection Systems and Control Systems for the nuclear, energy, oil and gas and utilities industries.

Led by our team of industry experts, our specialist nuclear consultancy team of SQEP personnel provide safety design and assurance of safety and safety related systems equipment and nuclear safety case support services.

Our Systems Integration specialists cover the full range of project services from conceptual design, front end engineering and design (FEED) studies, design, manufacture and factory acceptance testing through installation, commissioning and post-handover activities to on-going operational support, enhancements and obsolescence management.

Main products/services or technologies

Consultancy

- Independent design substantiation of safety and protection applications

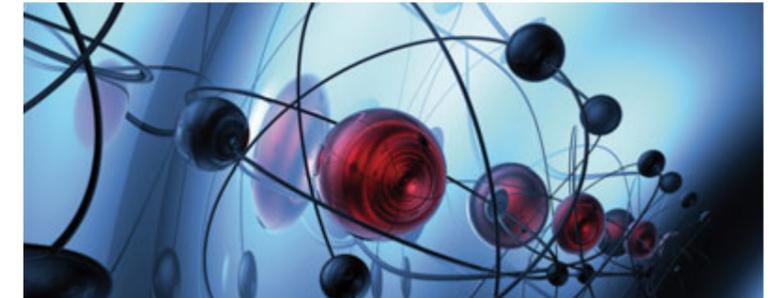
- Independent design review of safety and protection applications
- Safety integrity level (SIL) calculation and assessment review in accordance with IEC 61508/61511
- Sellafield EG90, EDF Modest integrity guide (MIG) for Programmable Electronic Systems (PES) equipment advice and assessment
- EMPHASIS SMART device assessment
- Failure modes effects analysis and failure modes effects and diagnostics analysis (FMEA/FMEDA) Studies
- Independent equipment validation and verification
- Embedded systems design and advice for Safety and Safety Related applications; including Software, Hardware and Complex Electronic Hardware - Field Programmable Gate Array (FPGA), Programmable logic device (PLD) etc.
- Safety Case Support including Safety Case Improvement Plans (SCIPs)
- Control Systems obsolescence strategy, management, advice and support
- Bespoke and specialist hardware and software design including re-engineering substantiation

Experience/results, past clients

Approved Sellafield Ltd control systems framework Partner. Other clients include: Amec, AWE, Babcock International, Costain, Defence Estates, Dounreay Site Restoration Ltd, EDF Energy, Fabricom, General Electric, Jacobs, Magnox.

Management, Advisory and Engineering Expertise - Solving tomorrow's problems today

DBD Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.dbdlimited.com

Address:
Chadwick House, Birchwood
Park, Warrington, Cheshire,
WA3 6AE

Phone:
+44 1925 814 084

Fax:
+44 1925 814 281

Email:
enquiries@dbdlimited.com

Brief Organisation profile

DBD is a UK-registered, independent company providing innovative solutions to complex management, technical and engineering issues focused on highly regulated industries (particularly Nuclear). Our success since launch in 2004 has been built on the quality of our delivery to our Clients, provided by our management and technical expertise. The consistent high quality delivery has led to the establishment of trust based, long term relationships with our Clients.

Today, our specialists operate across many major processing and power sites, including key nuclear sites in the UK. We also provide services to Clients and Partners in North America, Europe, Japan and South Africa. A key differentiator for DBD is our dedication to building a clear understanding of the Client's requirement, their objectives and success criteria.

Main products/services or technologies

Management Advisory

- DBD provides management advisors with an impressive proven track record in strategic and business leadership. Using DBD developed processes, we provide our Clients with high quality, transparent and auditable solutions. We deliver:
- Strategy Development - Business and Technical
 - Risk Identification and Resolution
 - Decision Making Support
 - Safety, Security and Environmental Management
 - Commercial Management
 - Technical Peer Reviews
 - Leadership Development

Engineering Solutions

DBD has an outstanding track record in providing conceptual and detailed engineering expertise to deliver robust solutions.

We deliver:

- Front End and Systems Engineering
- Whole Life-Cycle Design Packages
- Process Simulation and Operational Models
- Safety Case, Safety Case Integration and Regulatory Compliance
- The full scope of Inactive and Active Commissioning and Pre-Operations Management

Experience/results, past clients

Our clients and projects, past and present, include:

- Sellafield Ltd, UK – Commissioning Management of HA Evaporator D
- NDA, UK – Review of UK Spent Fuel Management Strategy
- Sellafield Ltd, UK - post-Fukushima resilience assessment and development of Severe Accident Management Strategy
- Magnox, UK – Review of Wet Waste Strategy, Trawsfynydd
- AWE, UK – Review of Design, Technology and Engineering of Major Projects
- ITER, France – Selection of appropriate technology for fuel plant process simulation
- Sellafield Limited, UK – Implementation of Technical Readiness Level (TRL) Process
- Jacobs, UK – Review of Commissioning Programme for AWE UK
- WRPS, USA – Review and selection of appropriate technology for Vitrification process

Supporting our clients in the development of safe, sustainable and economically achievable solutions for radioactive waste management

Eden Nuclear and Environment Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.eden-ne.co.uk

Address:
Eden Conference Barn, Low Moor, Penrith, Cumbria, CA10 1XQ UK

Phone:
+44 (0) 17683 62009

Fax:
+44 (0) 1768 239100

Email:
ajb@eden-ne.co.uk

Brief Organisation profile

Eden Nuclear and Environment was established in 2007 to provide consultancy and management services within the nuclear sector and for users of radioactive materials. Our aim is to support our clients in the development of safe, sustainable and economically achievable solutions for radioactive waste management. The experience of our seven-strong team encompasses support to operational and decommissioning nuclear sites, new nuclear build utilities and radioactive waste disposal. We also work extensively with regulators, government organisations and international advisory bodies. Our approach is to work in close partnership with our clients, providing a high level of technical excellence through cost effective and targeted delivery programmes.

Main products/services or technologies

Our experience extends to decommissioning, radioactively contaminated land assessment, repository safety studies, assessments of radiological impact, biosphere assessments for humans and non-human biota and delicensing and clearance and exemption. We develop strategies for the management of contaminated land and radioactive wastes.

Our staff have extensive experience of managing and contributing to safety assessments at the UK's Low Level Waste Repository and for the UK Geological Disposal Facility. We have

undertaken specialist assessments for Posiva in Finland and SKB in Sweden.

We deliver a wide range of radiological risk assessments relating to the management of land with radioactive contamination. This covers civil nuclear and defence sites – both in the UK and internationally. We support UK nuclear industry in dedesignation assessments under the Energy Act, ALARP reviews and provide technical review for investigative programmes and remediation.

We are accredited to ISO 9001:2008 as specialists in the assessment of radionuclide impacts to the environment and the management and disposal of radioactive waste.

Experience/results, past clients

Eden Nuclear and Environment is working internationally with a wide range of radioactive waste operators and regulators including NUMO and JANUS (Japan), the IAEA (Vienna), Posiva (Finland), SKB (Sweden), NWMO (Canada), ANDRA (France) and NRPA (Norway). In the UK we are working with clients such as Sellafield Ltd, URENCO UK Ltd, EnergySolutions (EU) Ltd, LLWR, Magnox Ltd, DSRL, RSRL and NDA RWMD. Eden also provides the Technical Secretariat for the BIOPROTA (www.bioprota.com) international forum.

Manufacturers of ball valves and automation packages for the nuclear industry Actuators

FLowsERVE FLOW CONTROL UK



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.flowserve.com

Address:
Burrell Road, Haywards Heath, West Sussex, RH16 1TL, United Kingdom

Phone:
+44 1444 314427

Fax:
+44 1444 314401

Email:
nwarwick@flowserve.com

Brief Organisation profile

Became part of the Flowserve Corp. in 2002.

No. of employees approx. 250.

Main products/services or technologies

The name 'Worcester Controls' is one of the many heritage/brand names within the 'Flowserve Flow Control' division of Flowserve Corporation. For almost 50 years Worcester Controls have been manufacturing highly engineered ball valves for critical service applications. The Company's pedigree in nuclear covers a wide range of applications over a long period of supply. In fact, Worcester Controls have supplied all the nuclear power stations in the United Kingdom and various EU countries whether in power generation, re-processing or decommissioning as well as many other countries globally.

Flowserve Corporation is the recognised world leader in supplying pumps, valves, seals, automation, and services to the power, oil and gas, chemical and other industries. With more than 15000 employees in more than 50 countries, we combine our global reach with a local presence.

Experience/results, past clients

Flowserve Flow Control UK (Worcester) have supplied valve and actuation packages to all the nuclear power plants in the UK and other sites in Finland, Sweden, China and Argentina.

Past clients have included Areva, Westinghouse and EDF.

Forth Engineering Cumbria (LTD) prides ourselves in being multi discipline solution providers as well as being nuclear innovation specialists

Forth Engineering Cumbria (LTD)



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.forth.uk.com

Address:
Risehow Hydraulics Centre,
Risehow, Flimby, Maryport,
CA15 8PA

Fax:
01900 811333

Email:
info@forth.uk.com

Name of distributor/agent in Japan:
Mark Telford

Address:
6 Pheasants Rise Rowrah,
Frizington, Cumbria, CA26
3XR

Phone:
07800939928

Fax:
01900 811333

Email:
mark@forth.uk.com

Brief Organisation profile

Forth Engineering was set up in the year 2000 and since, has supplied fluid components for local and international firms around the globe. We offer a tailor-made consultancy service for hydraulic, pneumatic and vacuum solutions.

Recently an expansion to the company has developed in the form of a nuclear research and development facility paramount in meeting customer needs and demands.

We pride ourselves with the specialized and qualified team we have here at Forth Engineering and our 18 employee members are one of the key attributes to our success.

Main products/services or technologies

Forth Engineering (Cumbria) LTD's capabilities include:

- 3 story mock-up which represents B30's wet bays including a mock-up of the Butterfly crane skip handler capsule and tooling
- 3.5Mtr cubed fully wetted pond to accurately represent conditions
- Rig hall space used to facilitate proof of concept trials and development
- Workshop facilities
- Training / Conference facilities
- 3D CAD & Printing capabilities / prototyping
- Mechanical engineers

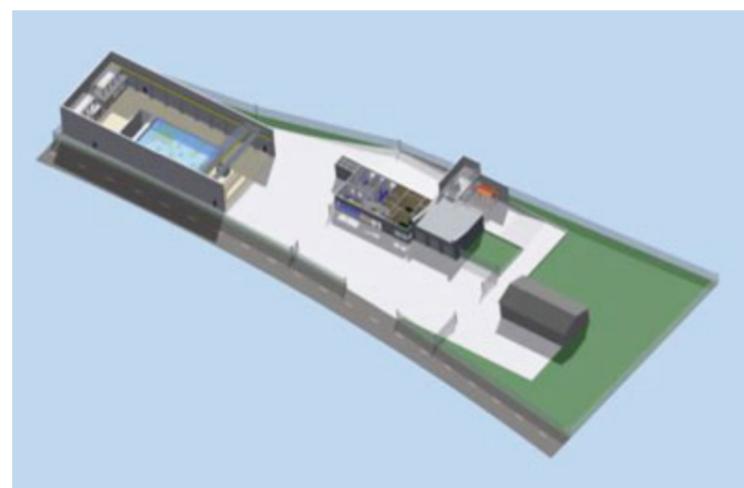
- Electrical / CE&I Engineers
- Design & 3D CAD engineers
- Welding & fabrication
- Fluid power consultants
- P4 Pass and classified workers with SC Clearance
- SL Security approved Site
- Quality grade audited to SL QG 04/03 and 02
- ISO 9001-2008

New to December 2012: Deep recovery facility

- Purpose built sectional replica of L P & S wet bays (This is a 30Mtr x 10Mtr x 6Mtr Deep fully wetted pond facility including furniture, housed in a 50Mtr x 30Mtr x 8Mtr High Building boasting a 15Tonne Wellman & Booth Nuclear grade gantry crane)
- New for September 2012 18Mtr X 10Mtr X 4Mtr Rig hall with a 3M 3 Wetted pond facility boasting a 3T Overhead crane

Experience/results, past clients

Forth Engineering (Cumbria) LTD have had experience working successfully with a range of customers, both in the UK and internationally which include influential companies like Sellafield LTD, Shepley Engineering, Doosan Babcock and EDF Energy to name a few.



Providing risk management consultancy and research services to an international clientele on nuclear decommissioning and radioactive waste management and disposal

Galson Sciences Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.galson-sciences.co.uk

Address:
5 Grosvenor House, Melton Road,
Oakham, Rutland LE15 6AX, UK

Phone: +44 1572 770649

Fax: +44 1572 770650

Email: info@galson-sciences.co.uk

Name of distributor/agent in Japan:
Kunio Itoh, Japan NUS Co Ltd

Address:
Nishi-Shinjuku Kimuraya Building
5F, 7-5-25 Nishi-Shinjuku, Shinjuku-
Ku, Tokyo 160-0023

Phone: +81 (3) 5925 6712 (Direct)
+81 (3) 5925 6730 (Company)

Fax: +81 (3) 5925 6735

Email: itohk@janus.co.jp

Name of distributor/agent in Japan:
Yasuyuki Nishiwaki, Mitsubishi
Corporation, Nuclear Fuel, Power
Systems Unit

Address:
Marunouchi Park Bldg, 6-1,
Marunouchi 2-chome, Chiyoda-ku,
Tokyo, 100-8086

Phone: +81 (3) 3210 4045

Fax: +81 (3) 3210 9265

Email: yasuyuki.nishiwaki@mcps.
mitsubishicorp.com

Brief Organisation profile

Galson Sciences Limited (GSL) is registered in England and Wales under registration number 2738897. GSL's head offices and registered offices are located at 5 Grosvenor House, Melton Road, Oakham LE15 6AX, Rutland. The Managing Director is Dr. Daniel A. Galson, who should be contacted with any questions concerning the company's corporate or financial data. GSL has no parent company and no group companies.

GSL's annual gross turnover in 2012 is expected to be £2,700,000. We have 20 staff, of whom 17 are consultants.

Our contracts range in value from projects requiring several days effort to projects running over many years and having values of several millions of pounds. We currently have about 50 contracts running at any one time, and will be working on about 100 different contracts this year.

Main products/services or technologies

Risk Assessment – Disposal of Radioactive Waste to Near-Surface and Geological Disposal Facilities

- Safety case development
- Safety and risk assessment
- Disposal system concept development and assessment
- Waste packaging assessment
- Detailed modelling studies
- Nuclear criticality safety assessment
- Contaminated land

Scientific Investigations and Analyses - Disposal

- Biosphere processes
- Geological characterisation and modelling
- Hydrogeological characterisation and modelling
- Contaminant chemistry and transport
- Gas generation and migration
- Thermo-hydro-mechanical analysis
- Monitoring plans and programmes
- Data management

Nuclear Decommissioning Support

- Cost forecasts and analyses
- Decision analysis and option studies (BPEO/BPM/BAT)
- Information and Document Management
- Lifecycle management of radioactive wastes and materials
- Management consulting

Radioactive Waste Management

- Waste inventory audits and assessments
- Waste processing and packaging studies
- Waste storage studies
- Waste disposal / optioneering studies
- International reviews

Nuclear Regulation Support

- Regulatory expertise
- Licensing
- Peer reviews
- International projects

Nuclear Safety Studies

- Collation and analysis of nuclear safety information
- Reviews of nuclear facilities and operations
- Reviews of nuclear safety regulations and practice

Risk Communication

- Management of stakeholder engagement
- Research studies
- International reviews

Experience/results, past clients

Japanese clients:

- Nuclear Waste Management Organisation (NUMO)
- Japan Atomic Energy Agency (JAEA)
- Japan Nuclear Fuel Cycle Development Institute (JNC)
- Nuclear and Industrial Safety Agency (NISA)
- Japan Nuclear Energy Safety Organization (JNES)
- Japan Nuclear Technology Institute (JANTI)
- Institute of Nuclear Safety Systems (INSS)
- Radioactive Waste Management Funding and Research Center (RWMC)
- Kajima Corporation
- Japan NUS Company (JANUS)
- Mitsubishi Corporation (MC)
- Japan Gasoline Corporation (JGC)

Selected other clients:

- IAEA, OECD/NEA, EC, WHO (International)
- NDA, RWMD, DSRL, Magnox Limited, Environment Agency (UK)
- ANDRA, CEA, ASN, IRSN (France)
- SKB, SSM (Sweden)
- ONDRAF/NIRAS, SCK/CEN (Belgium)
- POSIVA (Finland)
- NAGRA (Switzerland)
- USDOE, SNL, Westinghouse (US)

HESCO, the original and global choice for rapidly deployed barrier systems

HESCO Bastion Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys
- **Other**
 - ▶ Site Security

>>>Company Information

Website address:
www.hesco.com

Address:
Unit B, Molasses House,
Plantation Wharf, London,
SW11 3TN

Phone:
+44 207 350 5454

Email:
Shaun.ellis@hesco.com

Name of distributor/agent in Japan:
Nippon Tokuso Co. Ltd

Address:
Leflascucc Hirakawa-cho Bldg.
1-9-9 Hirakawa-cho
Chiyoda-Ku, Tokyo 102-0093

Phone:
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Fax:
+81 3 3288 3359

Email:
info@n-tokuso.co.jp

Brief Organisation profile

HESCO Bastion, founded in 1991, is an innovator and world leader in the design, development and manufacture of barrier systems that provide protection for people, property and places. It currently operates from five locations based in the United Kingdom and the United States, with approximately 200 employees.

Main products/services or technologies

HESCO barriers were initially designed as an innovative method of addressing soil stabilization problems, soon after their invention the military potential for the product was identified by the British Army and immediately deployed to protect personnel in the Balkans Conflict.

The US military, having seen the effectiveness of HESCO walls, began deploying Concertainer units for camp and asset protection. From this time the US and UK militaries have been major customers and advocates for HESCO barriers.

HESCO products have developed from being just a military protective barrier into a globally recognized application for disaster management; protecting critical infrastructure from hurricanes, tropical storms and floods



and has become an effective solution for homeland security requirements.

Experience/results, past clients

- HESCO has worked with governments and civilian organizations around the world providing solutions for:
- Perimeter protection of AWE & Sellafield Nuclear facilities, UK
 - Protective at Faslane and Culdrose Nuclear facilities, Scotland
 - Insurgent attacks against Exxon Mobil, West Qurna oilfield in Southern Iraq
 - Rising flood water during Hurricane Isaac in Louisiana, USA
 - Securing the Din Daeng Highway during the 2011 flooding
 - Temporary perimeter fencing and shelters for United Nations projects
 - Perimeter protection at Boeing, Washington State, USA
 - Perimeter protection Conoco Philips, USA
 - Environmental protection at Port Fourchan Beach during Gulf of Mexico oil spill
 - Perimeter fencing to secure the United Kingdom's National Grid
 - Accommodation compound perimeter security, Canadian Nexen Oil Company, Yemen

HR Wallingford provides world leading analysis, advice and support in engineering and environmental hydraulics for the nuclear power industry

HR Wallingford



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
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Phone:
+44 (0)1491 835381

Fax:
+44 (0)1491 832233

Email:
info@hrwallingford.com

Brief Organisation profile

Created as the Hydraulics Research Station of the UK Government in 1947, we became a private company in 1982. Since then HR Wallingford has operated as an independent organisation with a unique combination of knowledge, assets and facilities all on one site at our head office in the UK. Facilities include physical modelling laboratories, a full range of computational modelling tools, world leading ship simulation centre and above all expert staff with world renowned skills and experience. Today HR Wallingford Ltd has a 60 year track record of achievement in applied research and specialist consultancy with 265 staff, reaching clients and partners globally through our network of offices, agents and alliances around the world.

Main products/services or technologies

HR Wallingford provides specialist consultancy, design and testing services in civil engineering hydraulics, covering behaviour of water in built and natural systems and the interaction between the two. We deliver effective solutions based on our technology, expertise about the aquatic environment and experience in project requirements. We assess and collate information, construct physical models, set up computational simulations, interpret information in support of the decision making process, and engineer solutions for the nuclear industry. Work is performed under a Quality

Management System certified to ISO 9001:2008, and an Environmental Management System certified to ISO 14001:2004. We advise on a number of aspects of decommissioning of nuclear sites, and provide services on: field investigation and site assessment; cooling and process water supply and discharge; extreme design conditions; tsunami and coastal protection; sediment transport and morphological analysis; emergency response; management of plant effluents. We contribute to Environmental Impact Assessments, and represent our clients in consent and planning applications.

Experience/results, past clients

HR Wallingford has been helping clients address the engineering challenges of the nuclear industry for 50 years. We were involved in the planning of the first generation of British nuclear power plants in the early 1960s and are now assisting in their decommissioning and the planning of the next generation. Our expert staff have worked on projects at all British nuclear power plant sites, including Magnox, AGR, PWR and FBR technologies, and have worked on a range of international nuclear power projects. Our clients include Chiyoda, Sumitomo, Hitachi Zosen, J Power, Mitsubishi, JGC, Bechtel, KEPCO, EDF, Magnox and British Energy.

ITS, a Sellafield Control Systems Framework Partner designs and implements process control, vision inspection and tracking solutions for the nuclear sector

Industrial Technology Systems Ltd (ITS)



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- Waste management
 - ▶ Waste processing, conditioning & passivation
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 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.its-ltd.co.uk

Address:
ITS House, High Force Road, Riverside Park, Middlesbrough, TS2 1RH

Phone:
+44 (0)1642 222232

Fax:
+44 (0)1642 222166

Email:
m-taylor@its-ltd.co.uk

Brief Organisation profile

Established in October 1991, ITS is a leading-edge, independent systems integrator with extensive experience in the design, implementation and support of the following solutions and complementary services in the nuclear sector:

- Management Information Systems
- Process Control Systems
- Project Management & Engineering Services
- Regulatory Compliance Training
- Vision Inspection Systems

ITS' services include everything from FEED and feasibility studies, consultancy through to full lifecycle project delivery and 24/7 system support.

ITS' engineers are passionate about understanding each customer's needs, to ensure that the team delivers solutions that meet expectations and do exactly what's required.

With accreditation to BS EN ISO 9001:2008 and ISO 90003 TickIT, and compliance with ISA-88, ISA-95, IEC61131, IEC61511, IEC61513 and IEC61508 standards, customers can be confident in the quality of ITS' services.

Main products/services or technologies

ITS designs, implements and supports a range of real-time IT and industrial control solutions and offers a range of complementary services to the nuclear sector including:

- PLC and SCADA systems
- DCS systems
- IEC-61508 / 61511 / 61513 compliant safety systems
- Non-contact vision inspection systems
- Radiation tolerant camera solutions
- Management information systems
- Fuel tracking solutions
- Database solutions

- Legacy system replacement services
- Reverse engineering solutions
- Project management services
- Engineering manpower support
- FEED and feasibility studies
- Consultancy
- 24-7 call out support

As an independent systems integrator with approved systems integrator status/strong partnerships with a number of leading suppliers including ABB, AspenTech, Cognex, Honeywell, ICONICS, Microsoft, Mitsubishi, Rockwell Automation, Siemens, and Wonderware, ITS specialises in offering the best solutions to meet each customer's requirements.

Experience/results, past clients

ITS has been actively involved in the nuclear industry for over 16 years. Having successfully completed over 100 projects for Sellafield Ltd, National Nuclear Laboratory, Magnox (Wylfa), Sizewell and Oldbury, ITS has extensive experience working both to Sellafield Ltd's internal requirements, and other industry standards including IEC61511 and IEC61508.

Examples of testimonials received

"Good customer/client relations and customer focus. Very competent and capable." **Sellafield Ltd**
"Excellent response to queries, following project implementation." **Magnox**
"Good effective communication. Good response to enquiries. Excellent understanding of their products and ability to relay this information in layman's terms. A very professional outfit operating in a most demanding project environment." **Crown House Technologies**

Land Quality Systems (and related services) for collecting, managing and analyzing ground contamination data and supporting land clean-up and remediation

Informed Solutions



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- Waste management
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.informed.com

Address:
The Old Bank, Old Market Place, Altrincham, Cheshire, WA14 4PA, UK

Phone:
+44 (0)161 942 2000

Fax:
+44 (0)161 942 2015

Email:
David.Chapman@informed.com

Brief Organisation profile

Informed was founded in 1992, and is an independent professional services and systems integration practice.

We have 20 years experience in the energy industry, where we have worked with global oil majors, national electricity generators and distributors, and nuclear waste and reprocessing sites.

We provide a range of specialist services and systems to the energy industry including land quality and asset management, regulatory licencing, workflow automation and case management. Informed have some 20 consultants in our energy practice and a broad network of specialist alliance partners and associate subject matter experts.

We are a privately held business, operating in the UK and globally and have won a number of prestigious national and international awards.

Main products/services or technologies

Informed provide project consultancy, solution delivery and on-going support in a number of specialist areas across the energy industry, including:

- Land Quality and Land Remediation Management Professional Services and Systems
- Asset Management Professional Services and Systems
- Spatial, Location & Geographic Information Professional Services and Systems
- Information & Knowledge Management Professional Services and Systems
- Consultation & Collaboration Professional Services and Systems
- IT & Geospatial Estate Assessment Services
- Service Integration and Management (SIAM)

Experience/results, past clients

Sellafield Ltd (Europe's largest nuclear reprocessing site)

We have provided a Land Quality System to manage a 60 year legacy of land contamination from nuclear activity, that is being used to clean-up the Sellafield nuclear site. The system manages over 700 types of groundwater and soil contamination data over a 40 year period, and seamlessly integrates information from 8 different systems.

Shell Retail International (International Fuel Retail division of Shell)

We have provided Land Quality Systems to manage hydrocarbon contamination of land and clean-up activities at Shell's fuel retailing sites in some 40 countries worldwide.

James Fisher Nuclear is an established supplier of specialist engineering, manufacturing and technical services for applications within challenging environments or with high integrity requirements

James Fisher Nuclear Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
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 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.jfnl.co.uk

Address:
Golden Hill Centre, School Lane, Leyland, Preston Lancashire PR25 2TU

Phone:
+44 (0) 01772 622200

Fax:
+44 (0) 1772 622455

Email:
contactus@jfnl.co.uk

Name of distributor/agent in Japan:
Simon Pyne

Address:
Golden Hill Centre, School Lane, Leyland, Preston Lancashire PR25 2TU

Phone:
+44 (0) 1653 602840

Fax:
+44 (0) 1653 697379

Email:
simon.pyne@jfnl.co.uk

Brief Organisation profile

Restructured in 2005 JFN is a niche supplier of specialist services and equipment to a diverse range of nuclear customers who operate in the decommissioning, production and generation market sectors. JFN offer a comprehensive range of products and services to deliver a project right through from concept design to manufacture, installation, commissioning and on through life support.

JFN provides the nuclear industry with a diverse range of both standard and bespoke designs and equipment, which are robust, reliable, maintainable and cost effective. Products supplied range from components and sub-assemblies through to rigs, instruments, systems and skid-mounted turn-key plants for processing hazardous materials.

Main products/services or technologies

ROV Plant and Waste Characterisation

JFN design and deploy bespoke and OEM Remote Operating Vehicles for both surface and underwater applications. Both instrumentation (laser scanning / visual imaging / sonar / radiometric / NDT) and mechanical handling (remediation / demolition / maintenance) systems are available.

Remote Handling

JFN design, manufacture and commissioning manipulators, deployment systems and associated

tooling for use in a wide range of hostile environments. We can develop bespoke solutions to meet specific requirements and are able to assist clients in the specification process. Alternatively we can provide a flexible platform with ongoing tooling development to meet emerging issues in real time.

Radiometric Instrumentation

JFN, in partnership with OEM suppliers, provides a range of radiation detection, measurement and protection products and services. All equipment can be supplied, installed, commissioned and maintained by JFN.

Modular Systems

JFN design, build and commission a range of ISO freight based equipment including change rooms, vent plant, waste packaging and process equipment.

Experience/results, past clients

JFN has experience of working successfully with a range of customers across the UK. In recent years, principal customers have included; Sellafeld Ltd, DSRL, Babcock, AMEC, Westinghouse, EDF Energy, UK Nuclear Decommissioning Authority, AWE, Energy Solutions, LLWR and Rolls Royce.

JGC is one of the UK's leading engineering companies. We have the breadth and depth of technical expertise to respond to the complex challenges of major engineering projects

JGC Engineering & Technical Services Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
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Address:
JGC House, Janetstown, Thurso. Scotland KW14 7XF

Phone:
+44 (0)1847896767

Fax:
+44 (0)1847891448

Email:
info@jgc.co.uk

Brief Organisation profile

JGC has the skills, knowledge and proven experience to plan, design, manufacture and implement the solutions to complete the project. Since its start in 1972 we have grown the business beyond local engineering services to a respected national and international manufacturer and supplier of quality assured engineering services. Building on our skills in mechanical, electrical, controls and instrumentation allows us to meet the needs of today's nuclear, energy and utilities markets and their demands for tomorrow. JGC with a current workforce in excess of 120, has the capability to deliver on the most complex and difficult projects that require many diverse process operations and multi disciplined teams. Turnover of the company is in excess of £10m.

Main products/services or technologies

JGC's extensive experience, within the power, nuclear, utilities, energy and industrial sectors includes process instrumentation installations working in clean and hazardous areas. Our skilled teams provide responsive and flexible innovative design solutions, provide testing and inspection services and offer on-going planned maintenance. From its inception, JGC have been providing engineering and consultancy services to the energy industry. We have continuous experience working on UK energy projects- on and off-shore. JGC's

experience in providing high quality manufacturing, inspection, testing and surface protection as well as reliable delivery proves our ability to give best value to our clients.

JGC has continually provided engineering support to our clients in both local and national markets. Specialising in mechanical engineering provision through our extensive facilities, JGC have developed the capability portfolio to include EC&I provision as well as support services such as design, drafting, inspection, scaffolding, lifting and painting. Our unique skills set and comprehensive facilities allow us to complete entire projects from conception to operations without the requirement to sub-contract.

Experience/results, past clients

Downreay Site Restoration Ltd – D1208 Ventilation Project, D1207 Decontamination & Demolition. AMRR Alliance Projects including Sodium Disposal. Babcock – Various Projects including Nuclear Submarine Breakfall. Magnox Ltd – Secondary Containment Vessel Manufacture for LLW. Nuvia – Various Projects Rolls Royce – Retention Nuts and Covers for Submarine Propulsion Units. Onet Group – Fuel Bundling Handling Equipment For Ignalina Power Plant Decommissioning - Lithuania.

A market leader in decommissioning, demolition and land remediation, prioritising safe delivery and helping our customers realise value from their assets

KDC Contractors Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
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Address:
1 Robeson Way, Manchester,
M22 4SW

Phone:
+44 (0)161 947 2150

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+44 (0)161 947 2160

Email:
Rachelle.tomlinson@kdc.co.uk

Brief Organisation profile

KDC has developed immeasurably from its initial inception in 1990 and now has a workforce of 150 people.

We provide competitive decommissioning services including strategy development, hazard characterisation, decontamination (asbestos, radiological and chemo-toxic), de-planting, asset appraisal and disposal, demolition and land remediation.

We serve the nuclear; energy and natural resources, pharmaceutical, process, utility and industrial markets, mainly in the UK and Ireland.

We are a privately owned company, financially secure with management and a global investment bank as main shareholders.

Our focus is exemplary Safety, Health and Environmental (SHE) performance to protect our own and our customers' people and other stakeholders. We are not complacent and constantly strive to improve.

We are proud of our core values, honesty, loyalty, professionalism, commitment and respect.

Main products/services or technologies

KDC specialise in delivering "end of asset life" and land remediation solutions.

KDC provide competitive decommissioning services including strategy development, hazard characterisation, decontamination (asbestos, radiological and chemo-toxic), de-planting, asset appraisal and disposal, demolition and land remediation.

KDC serves the nuclear; energy and natural resources, process; pharmaceutical, utility and industrial markets, mainly in the UK and Ireland. Customers include Sellafield, Magnox, AWE, Research Sites Restoration Limited, BP, Chevron, Total, Dow, Croda, GSK, Astra Zeneca, EDF and Scottish & Southern Energy.

These "blue chip" clients demand exacting SHE, Financial, Operational and Corporate Social Responsibility performance. KDC has many long term relationships with these companies proving we continue to deliver exemplary performance.

"The safe and sustainable delivery of our operations is one of KDC's core principles. My commitment is to ensure every one of our employees returns home safely at the end of every working day".

Ian Smithson, Managing Director

Experience/results, past clients

Our customers come from a wide range of sectors including Nuclear, Energy and Natural Resources, petrochemical, pharmaceutical, utilities, the public sector, manufacturing and heavy industrial.

Over the last 20 years KDC has delivered large and small projects for these customers: Aesica / AWE / Bovis Lend Lease / BP / Chevron / ConocoPhillips / Croda / Dounreay (DSRL) / Dow Chemicals / ESB / ExxonMobil / GE Healthcare / ING / Magnox / RSRL / Royal Mail / RWE npower / St Modwen / Scottish Power / Sellafield Ltd / SembCorp / Solutia / SSE / Syngenta / Wales & West Utilities

Marine Works, Land Pipelines, Process Plant EPC, Storage Tank Services, Engineering, Specialist Plant and Equipment Hire, Horizontal Directional Drilling, Auger Boring

Land and Marine Project Engineering Limited

Land & Marine



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
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 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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www.landandmarine.com

Address:
Dock Road North,
Bromborough, Wirral, CH62
4LN

Phone:
+44151 641 5600

Fax:
+44151 644 9990

Email:
company@landandmarine.com

Brief Organisation profile

Land & Marine has a wide business portfolio that includes energy, power and process plant, storage tanks, pipelines and trenchless technology as well as our traditional marine business. Founded in 1953 and based in North West England, the Company currently has a total workforce of 474, and Capital of circa £10m.

With our group company Land & Marine Protech, based in Uxbridge near London, we can provide conceptual and front-end engineering and design (FEED) services for oil, gas and process projects.

Land & Marine is an innovative company. Our flexible approach to working with clients enables us to provide optimum solutions. We are large enough to undertake substantial projects whilst retaining an intimate client contractor relationship. We develop techniques and equipment to suit the task in hand, and with a long and impressive history of successful projects behind us, we are always looking to build on this experience. One recent innovative solution was development of an underwater tracked ROV to detect and recover radioactive contaminated particles from the sea bed.

Main products/services or technologies

We have an impressive track record in the oil and gas, water, pipelines, energy and power generation businesses and operate in the following sectors:

- Energy, power, process plant and renewables

- Engineering and consultancy services
- Fabrication services
- Horizontal directional drilling and auger boring
- Land pipelines, HV cabling and aviation refuelling
- Marine pipelines and cables for offshore wind farms
- Specialist marine operations, including nuclear decontamination subsea
- Equipment Hire Services
- Storage tanks, seals and services

Experience/results, past clients

The Company generally works for Blue Chip type companies in the Oil Gas and Energy sectors. Major clients include National Grid, Scottish & Southern Energy, RWE, Centrica, BP, Shell, EON, Nuclear Decommissioning Authority, Perenco, Heathrow, Gatwick & Manchester Airports. Major works undertaken in the UK, include decommissioning 3 sub sea radioactive contaminated pipelines for British Nuclear Fuels at Sellafield, removal of radioactive contaminated particles from the sea bed for the Nuclear Decommissioning Authority, 205km of 1200mm dia pipeline in the UK, and 3 gas compressor stations in the UK all for National Grid.

"Life Matters"

Lloyd's Register / Scandpower



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
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 - ▶ Waste processing, conditioning & passivation
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 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.lr.org
www.scandpower.com
www.riskspectrum.com

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Queen's Tower A,
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Minatomirai, Nishi-ku
Yokohama, 220-6010, Japan

Phone:
+81 (0)45 682 5271

Fax:
+81 (0)45 682 5253

Email:
yokohama-energy@lr.org

Brief Organisation profile

Since 1760, Lloyd's Register has worked to enhance the safety of life, property and the environment with currently about 8,000 staff in 200 countries.

We have provided independent assurance and verification services to the nuclear industry for over fifty years, and have been involved with many major nuclear projects worldwide.

We are one of the largest independent consultancy companies providing risk management services to the nuclear power industry, and more than 50% of the world's nuclear power plants are using our RiskSpectrum® risk management software.

Scandpower, a wholly owned subsidiary of Lloyd's Register, performs quantitative risk analysis (QRA), a key element for safety management and risk control throughout design, construction, operation and decommissioning related to life and environment, market, contractual or regulatory requirements.

Main products/services or technologies

Systems, Structures, and Component Risk Assessment; Natural Hazard Risk Assessment; Third Party Inspections; Design Review; Independent Peer Review; Human Reliability Assessment; Risk Software Development; Reliability, Availability, Maintainability Analysis; Probabilistic Safety Assessment; Environmental Impact Studies

Experience/results, past clients

Mitsubishi Heavy Industry – risk assessment software and methods

Kyushu Electric Power Company – risk assessment software and methods

IAEA – earthquake and tsunami damage assessment for the Onagawa NPP

SKB Sweden – Safety analysis for final repository for spent fuel

Global corporation - Emergency response preparation wrt Fukushima

Logical Personnel Solutions is a supplier of recruitment services into the Nuclear industry, decommissioning, power generation, new build, waste and defense

Logical Personnel Solutions Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
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 - ▶ De-energising & demolition
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 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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+44 113 223 8200

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ben.lerner@logicalps.com

Brief Organisation profile

Logical Personnel Solutions are a UK based specialist staffing provider working within Nuclear industry. We operate globally providing both blue and white collar nuclear professionals on a contract or permanent basis. Our client list includes the UK NDA fleet, EDF new build and generation, Aldermaston etc and all their subcontractors, covering build, maintenance, design, and consultancy. Formed in 2006 we have experienced year on year growth, estimated turnover 2012 will be in excess of £10,000,000 with 40 internal staff. We are currently operating with 500 contractors working on site for us with a global database of over 30,000 candidates. We place up to 100 professionals permanently every year. Our service can be used for long term and short forecasted projects or even emerging works.

Main products/services or technologies

We are a specialist recruitment and manpower provider working within the Nuclear industry specifically decommissioning, build, maintenance, waste, design, consultancy and defense. Operating from the UK we tailor our service to our clients and mobilize staff globally, offering contingency and permanent recruitment solutions.

Through our comprehensive database we can source suitably qualified, experienced personnel from all over the world utilizing our internal resourcing and vetting team.

Our candidates range from blue collar build specialists, through to safety case authors, design staff, project management, consultants and more.

In the UK we partner with Radiation Protection Advisors (RPA) to provide all dosimetry information on all of our labour prior to deployment. We work to permanent requirements and both forecasted and emergency projects.

We have the capabilities to mobilize highly skilled teams within 48 hours worldwide.

Logical also have a flexible vetting team working to various standards including SC, CTC, DV, EDF etc. We can integrate our standards if need be.

Experience/results, past clients

Logical work with EDF new build and generation, the British NDA Fleet, Alstom, Mott MacDonald, Aldermaston, Atkins, Horizon, Eon, Iberdrola, Balfour, Siemens, Doosan Babcock and many more. (testimonials are available)

We have worked within New build, Maintenance, shut down and outage, design, consultancy, decommissioning, civils, emergency works, waste and defense.

Global Specialist in Radiological Protection and Decontamination

Matom Ltd



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
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- Waste management
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Intec, Parc Menai, Bangor,
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Phone:
+44 (0)1248 672617

Email:
mark@matom.com

Brief Organisation profile

Established 1999 in northwest Wales, Matom have grown to become one of the UK's top providers in operational and consultancy radiological protection, in addition to providing a diverse range of services into non-nuclear sectors around the world.

Matom are providers of a bespoke decontamination process, TechXtract®, that helps organisations meet the environmental challenges of reducing volumes of radioactive and chemical (e.g. PCBs) wastes. This is a global service that has current applications in the nuclear sector, ship-breaking, chemical process legacy sites, oil and gas, pharmaceuticals, and turbine cleaning.

Main products/services or technologies

- Decontamination
- Radiological Protection
- Health Physics
- Decommissioning

- Risk analysis
- Risk Management

Experience/results, past clients

- Tier 2 supplier to UK nuclear industry
- Worldwide operator of TechXtract® decontamination process
- Customers include: Magnox, BNFL, EDF, AMEC, Babcock
- Framework provider to the UK Government Decontamination Service
- Responsible for decontamination and cleanup following UK's only civilian CBRN incident
- Represent the UK government to the European Committee for Standardisation/Technical Committee (CEN/TC) for matters concerned chemical, biological, radiological, and nuclear (CBRN) incidents.
- Represent the Society for Radiological Protection (SRP) to the British Standards Institute (BSI) as part of the Societal Security Management Committee (SSM/1)



Provider of scientific and technical support on all aspects of radioactive waste management to governments, NGOs, regulators and implementers

MCM International



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
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 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Orchard Street Business Centre
13-14 Orchard Street
Bristol BS1 5EH United Kingdom

Phone:
+44 78 112 009 84

Email:
ellie.scourse@mcm-international.ch

Name of distributor/agent in Japan:
Collaborative projects developed with:

- Obayashi Corporation
- Quintessa Japan

Address:
Dr Hideki Kawamura; General Manager
Nuclear Waste Technology Department
Nuclear Facilities Division
Obayashi Corporation
Inter City B, Konan 2-15-2,
Minato-ku
Tokyo 108-8502, Japan

Email:
kawamura.hideki@obayashi.co.jp

Brief Organisation profile

MCM International, founded in 2006, brings together a team of consultants with unique international strategic, scientific and technical experience in radioactive waste management.

The three partners, Dr Charles McCombie, Professor Neil Chapman and Dr Ian McKinley, have each been involved for over 35 years in planning, implementing and regulating nuclear waste programmes and projects worldwide. They are complemented by a staff of 6 and an international group of Associates, who bring together a wealth of experience in every field of waste management.

MCM is currently a partnership, with an annual turnover approaching 1 MGBP, which will become a limited company in early 2013.

Main products/services or technologies

- Services provided include the development, implementation and review of:
- Strategic planning at national/regional programme level
 - Planning tools and databases (inventories, costing, resources)
 - Storage and disposal concepts for all kinds of waste in a wide range of settings
 - Site selection and characterisation
 - Operational and post-closure safety cases
 - Decommissioning, cleanup and remediation
 - R&D programmes and infrastructure
 - Programme management tools & database (requirements, knowledge, technical quality, issues)
 - Stakeholder communication and dialogue
 - Special technical project (international/multidisciplinary involving tectonics, URLs, analogues)
 - Education and training

In addition to the core capabilities listed above, the MCM team has worked in Japan for two decades and

recently been supporting JAEA with the decontamination and clean-up work at Fukushima, planning the feasibility assessment of direct disposal of spent fuel and production of a robust safety case for the proposed L1 repository at Rokkasho.

Experience/results, past clients

• **NUMO: Topaz – coordinating a study of tectonic and volcanic constraints on repository siting**
: International support team - running a team to provide ad hoc technical advice on emerging issues

• **JAEA: technical support and QA of Fukushima remediation demonstration projects**
: Development of advanced communication interface for decontamination knowledge transfer to all stakeholders
: Support on developing a demonstration of the feasibility of direct disposal of spent fuel in Japan
: Development of concepts for management of dismantling wastes and damaged fuel from Fukushima Dai-ichi

• **JNFL: Internal review of the L1 safety case and production of English summary report**

Suppliers of advanced CCTV inspection/surveillance camera systems for the Nuclear Industry

Mirion Technologies (IST) Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
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 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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2 Columbus Drive, Southwood Business Park, Farnborough, Hampshire, GU14 0NZ

Phone:
+44 (0)1252 375137

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Email:
dkaufman@mirion.com

Name of distributor/agent in Japan:
Cornes Technologies Ltd

Address:
Cornes House, 5-1 Shiba 3-chome, Minato-ku, Tokyo 105-0014

Phone:
+81 (0)3 5427 7550

Fax:
+81 (0)3 5427 7570

Email:
nonakam@cornestech.co.jp

Brief Organisation profile

Mirion Technologies has specialized in protecting people, property and the environment for over 50 years - offering a broad range of radiation detection, measurement, analysis and visual systems and services in the nuclear industry.

Mirion operates globally with five divisions: Imaging Systems, Radiation Monitoring Systems, Sensing Systems, Dosimetry Services and Health Physics. Mirion's products and services are offered to a wide variety of customers including nuclear power plants, military and civil defense agencies, hospitals and universities and national laboratories.

With over 700 employees worldwide, Mirion operates 13 production facilities in North America, Europe, and Asia. Our products can be found in more than 90% of the operating nuclear power plants worldwide, 17 of the NATO armed forces, thousands of medical facilities, and many industrial applications.

Main products/services or technologies

The Imaging Systems Division (ISD) offers one of most recognizable brands in the nuclear industry for visual inspection and surveillance needs. The divisional headquarters are located in Farnborough, Hampshire, UK. The Imaging Systems Division designs and manufactures leading-edge CCTV systems for inspection, surveillance and monitoring of difficult and hazardous environments, specialising in viewing systems for

the nuclear industry. Mirion is an acknowledged leading supplier of radiation tolerant cameras with industry recognized brands such as IST-Rees™.

IST-Rees cameras offer customers a wide range of inspection options. The cameras are equipped with a selection of lenses and lighting attachments, allowing operators the ability to carry out a variety of inspection tasks in both low and high radiation environments. Surveillance within nuclear power plants such as reprocessing, waste management and storage facilities is also an important part of a plant's operation. Permanently located within the plant and designed to survive hostile environments, IST-Rees cameras are an essential component of the industry's process control.

Experience/results, past clients

Mirion's camera systems have been supplied to Nuclear Power Plants, Reprocessing Plants, Waste Handling Plants and used for Decommissioning of Nuclear facilities all around the World.

Past clients include MHI, IHI, JNFL, Toshiba, Westinghouse, GE-Hitachi, US DOE, KHNP, KAERI, TPC, CNPE, EDF, Sellafield (BNFL) etc..

Large projects in Japan include JNFL RRP AA-facility, where Mirion supplied a system with over 50 cameras via MHI, for monitoring Reprocessing activity. Mirion also supply inspection cameras for the PWR and BWR programs.

Total Maintenance Solutions. MMS are a one stop shop for Mechanical, Electrical, Fabrication and Welding Installation and Maintenance Engineering services

Mon Maintenance Services Ltd (MMS)



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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www.monmaintenanceservices.co.uk

Address:
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Phone:
+441407 764211
+447948329360 (Mobile)

Email:
enquiries@monmaintenanceservices.co.uk

Brief Organisation profile

Mon Maintenance Services (MMS) was set up in 2009 to providing our highly trained tradesmen and services to the local, national and international markets. At present MMS have 12 full time employees and have a database of 200+ fully trained tradesmen of which we call on when required. Each tradesman is chosen specifically to meet the needs of other organizations, trained to that specific sector. MMS have shown consistent growth over the 3 year period with a recorded growth of 320% since inception turning over <£500,000 this year. MMS have the backing, and commitment to grow further in our chosen sectors, offering our services to the global market, Nuclear decommissioning being our specialty having been involved with decommissioning at Trawsfynydd Decommissioning site in the U.K since 2010.

Main products/services or technologies

With over 170 years combined experience in a wide range of disciplines and sectors of Engineering and Maintenance, we can offer a fully Comprehensive "one stop shop" Engineering Contracting, Sub - Contracting and Supply package - Mechanical, Electrical, Machining and Welding Fabrication all under one banner. MMS work to, and maintain accredited Quality, Health and Safety and Environmental management system certification. Our services include Installation, faultfinding and repair, periodic inspection and testing,

planned and unplanned maintenance services, preventative maintenance packages, production line change outs re-organisation and new production line installation, maintenance service contracts and crews for site support, overhaul and repair, high reach access services (MEWP), hydraulic and pneumatic , Conveyors and converging systems, Crushers, Gantry cranes, Pumps, bearings, Gear boxes, Compressors, valves, induction and extraction fans, shuttering, cladding ducting. MMS have an extensive database of Suitably Qualified and Experienced Maintenance and Operational personnel and can offer these as individuals or as maintenance crews for site work and much more.

Experience/results, past clients

MMS have worked for a number of global companies as main contractors and subcontractors in a number of different sectors. Having experience in Nuclear Decommissioning at Trawsfynydd Decommissioning Site, Defense contracts at RAF Valley, Local and Main Government authority work in North Wales. Our Client list includes:
CAE Inc, Lockheed Martin, Babcock Int, Costain, Amec, Jacobs, Welsh Government, ACTUS ILW, Marco Cable Management, Anglesey Sea Salt, Stenna Line, SMIT International

Multi-Discipline Engineering, Design & Technical Documentation Services to Nuclear, Aerospace, Defense & Power sectors

Morson Projects Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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+44 (0)1617862360

Email:
enquiries@morson-projects.co.uk

Brief Organisation profile

Morson Projects has been providing 'world class' multi-disciplined engineering, design and project management services for over 25 years to international clients. Established in 1979 with 750 employees and a turnover of £46million.

Morson Projects specialise in the supply of complete Engineering Solutions from Concept design through to total Project Implementation. Morson Projects has over 750 personnel housed within our modern, fully equipped offices utilising the latest technology. Headquarters are in Manchester with regional offices at Sellafield (On site in B170.1) & Greengarth, Birmingham, Belfast, Bristol, Hull, Bradford, Derby and Belgrade.

Morson Projects engineering services operate across a variety of industrial sectors giving them the added advantage of bringing to the client 'best practices' that have been developed in other industries and together with its own in depth experience in the nuclear industry effects a confidence resulting, invariably, in financial and programme benefits to the project.

Morson Projects client base in the nuclear sector includes: Sellafield Ltd, JET, EDF (British Energy), UKAEA & NNL.

Main products/services or technologies

Morson Projects Services include:
Engineering Solutions / Concept and Detail Design all disciplines / Analytical Services / Design Substantiation and Verification / Technical Documentation / Manufacturing / Project Management / Sourcing Solutions / Site support / Asset Care

Capability Skills include:

Project Management / Mechanical Handling & Tooling Design / Piping design & analysis / Control, Electrical & Instrumentation Design / Power, HV & LV Distribution / Civil, Structural & Architectural Design / Stress analysis / Building Services / Asset Surveying

Experience/results, past clients

Nuclear Sellafield Specific Experience

Current Direct SL Agreements

- TDH for ME&I value £9m/yr, specific frameworks include, HLWP, E&EP, Magnox, Plant Services, LP&S.
- Site Wide Technical Documentation Services value £4m/yr, LP&S, Magnox, HALES and Windscale.

Typically, Morson Projects are responsible for the coordination and delivery of multi-discipline design work including Mechanical, CE&I, HVAC, Technical Documentation, Analytical (Mechanical Handling, Vessel and Piping Systems), and continuous Asset Care Support for Plant inside and outside the 'Separation Area' on Sellafield site. Task Delivery includes the full spectra of 'Work Pack' documentation of complete plant designs to support the Sellafield site Production Facilities, Asset Care requirements and preparation of active and non-active facilities to be ready for Decommissioning at a later date. The MPL design team provide all the documentation associated with Front End Concepts/Detail design for Manufacture together with the necessary supporting documentation for implementation for submission to Plant Modification Procedure approval i.e. drawings, calculations, specifications, method statements, "Construction, Design and Management" risk assessments, schedules and Design Justification Reports etc.

NSG (Pilkingtons) New Glass Float Line

Complete Plant Model development using AVEVA PDMS Software for the building structure and all process plant, equipment and building services.

UKAEA / ITER Culham

Title: Conduit Assembly Setting Jig and Fixture

Morson Projects are involved in the design and manufacture of a setting/assembly jig for the production of conduit and trunking, which when installed in the Torus vessel will carry all the necessary cables for additional diagnostic equipment to be installed in the vessel at a later date.

Morson Projects responsibility was to design a fixture that recreates all the necessary pick-up points that exist inside the Torus vessel. All design work was via Catia V5 working with the master models supplied by JET. The jig will be manufactured by Aim Engineering, Morson Projects manufacturing partner, with whom we are liaising with regard to both the manufacture and the laser tracking of all the conduit pick-up points, which will be positioned to plus or minus 0,2mm.

Morson Projects deliverables to JET were a solid model of the as built jig with a full set of 2D drawings.

The UK's National Nuclear Laboratory offers an unrivalled breadth of technical products and services including nuclear waste management and decommissioning services

National Nuclear Laboratory



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
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 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Email:
customers@nnl.co.uk

Name of distributor/agent in Japan:
Nick Hanigan

Address:
National Nuclear Laboratory, Preston Laboratory (A709), Springfields, Salwick, Preston, Lancashire, PR4 0XJ

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nick.p.hanigan@nnl.co.uk

Brief Organisation profile

Our services cover the complete nuclear fuel cycle from fuel manufacture and power generation, through to reprocessing, waste management and decommissioning and including defence, new nuclear build and homeland security. NNL provides these services supported by an impressive range of facilities and links with international research organisations, academia and other national laboratories.

NNL offers commercial technologies for customers and trusted technical advice to Government. Our highly skilled and experienced employees specialise in providing tailored waste management and decommissioning solutions incorporating world class innovation for successful project delivery. NNL's ability to help build technical capacity for nuclear science and technology development both in the UK and internationally is based on our long-term operation of world-leading facilities and a wealth of technical experience, coupled with our significant network of global partnerships.

Main products/services or technologies

The NNL provides technical support and services to customers in three key areas of the nuclear fuel cycle:

Waste Management and Decommissioning

Products and services are focused on supporting customers via the development and application of technologies and techniques that assist with the ongoing and eventual decommissioning of nuclear facilities. These include environmental services, waste residue processing and waste

management technology.

Fuel Cycle Solutions

Products and services are focused on providing fundamental technical solutions to customers including fuel cycle performance and technology development, spent fuel disposition and plant integrity. Other areas covered include nuclear security, safety management, engineering services and advanced modeling and simulation services.

Reactor Operations Support

NNL provides key services to reactor operations. These include post irradiation examination and performance of fuel, components and graphite. Other services include power station chemistry, endoscopy and metallography. Additionally, NNL offers access to unique facilities.

Experience/results, past clients

NNL has experience of working successfully with a range of customers, both in the UK and internationally. In recent years, principal customers have included; Sellafield Ltd, US Department of Energy, JAEA, Babcock, Westinghouse, UK Ministry of Defence, EDF Energy, UK Nuclear Decommissioning Authority, UK and International Governments and the European Union.

As well as commercial work delivering the services outlined above, we also offer independent and authoritative advice to governments and nuclear regulators. We played an integral role in advising the UK government and nuclear regulator following the Great East Japan Earthquake and tsunami.

The National Physical Laboratory delivers social and economic impact through world-class measurement science, innovative applied research and knowledge services

National Physical Laboratory



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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www.npl.co.uk

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+44 20 8977 3222

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Email:
www.npl.co.uk/contact-us or
use contact person address
(ray.chegwin@npl.co.uk)

Brief Organisation profile

The National Physical Laboratory (NPL) is the UK's National Measurement Institute, and is a world-leading centre of excellence in developing and applying the most accurate measurement standards, science and technology available.

Formed in 1900 in south-west London, NPL now employs over 500 scientists. Our 36,000 square-metre purpose built measurement building comprises 388 of the world's most extensive and sophisticated measurement science laboratories.

NPL undertakes research and shares its expertise with government, business and society to help enhance economic performance and the quality of life. NPL's measurements help to save lives, protect the environment, enable citizens to feel safe and secure, as well as supporting international trade. Support in areas such as the development of advanced medical treatments and environmental monitoring helps secure a better quality of life for all.

Main products/services or technologies

NPL has been involved in radionuclide metrology since 1912, when delivery was taken of the first British National Radium Standard from Marie Curie. Today, NPL is supporting clients in the nuclear industry to:

- Keep reactors safely in service by providing reference materials to demonstrate correct operation of monitoring programmes, measuring the performance of materials in service or ensuring the reliability of key data.
- Decommission sites and facilities through the accurate classification of waste to ensure the most

appropriate and cost effective disposal.

- Model and test new plant materials in harsh environments to aid design decisions and predict lifetime management.

NPL's Radioactivity team combines wide-ranging expertise with state-of-the-art equipment and laboratory facilities to support radioactivity measurements and provides:

- Reference materials for instrument calibration to support compliance with quality standards and for confidence in measurements.
- Specialist radioanalytical services and facilities for the characterisation of samples.
- A comprehensive range of facilities for instrument development, validation and calibration.

Experience/results, past clients

As the UK's National Metrology Institute (NMI), NPL is involved in many international networks and represents the UK internationally both at a technical level and at the highest level of metrology. NPL enjoys many interactions with the National Metrology Institute of Japan (NMI Japan).

NPL engages in many international collaborative activities, including:

- European Metrology Research Programme (EMRP)
- CIPM Mutual Recognition Arrangement (CIPM MRA)
- Versailles Project on Advanced Materials and Standards (VAMAS)
- Secondment activities to and from other NMIs are encouraged

In the nuclear field, NPL undertakes international work for organisations such as the IAEA and CTBTO.

Lead strategic body that represents the industry to stimulate, coordinate and enable excellence in skills to support the Nuclear Programme

NATIONAL SKILLS ACADEMY NUCLEAR



Brief Organisation profile

The National Skills Academy for Nuclear is an employer-led membership organisation established in the year 2008 to ensure that the UK Nuclear Industry and its Supply Chain has the skilled, competent and safe workforce it needs to deal with the current and future UK nuclear programme, including all sub-sectors.

The Skills Academy puts employers at the forefront of skills solutions which are tailored for their specific needs – enabling Skills Development for the Nuclear Industry, by the Nuclear Industry. The Skills Academy has established a High Quality Training Provider Network which is tasked with delivering excellence in skills for nuclear to meet the quality required by the Nuclear Industry. A variety of courses are offered from undergraduate to postgraduate level at various Universities and Private Training Providers in the UK.

>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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+44 1900 898120

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+44 1900 898129

Email:
enquiries@nuclear.nscademy.co.uk

Main products/services or technologies

The Skills Academy can provide solutions and services in a variety of ways to enable high quality skills development. This includes but not limited to

1. Training and Skills development in all sub sectors of the industry including; Decommissioning, Waste Management and Radiological Protection via our High Quality Provider Network in UK (Collaborators: UK Universities & private training providers)
2. Reduce costs of repeat training by providing consultancy on developing systems for recording and verification of training (Example: UK's Nuclear Skills Passport - <http://www.nuclearskillspassport.co.uk/>)
3. Consultancy of development of a central skills agency responsible for nuclear Skills development (Existing Client: World Institute of Nuclear Security (WINS))
4. Development of Human Performance Standards

(Collaborators: Institute of Nuclear Power Operations [INPO, USA]; Cogent - Sector Skills Council [UK])

5. Development of Programs and Qualifications in collaboration with industry to meet identified skills gaps and requirements. Such developments include:

- Certificate of Nuclear Professionalism - <http://www.nuclear.nscademy.co.uk/products-services/certificate-nuclear-professionalism>
- Triple Bar - <http://www.nuclear.nscademy.co.uk/services/triple-bar-existing-sites>

Experience/results, past clients

The Skills Academy is working with Nuclear Decommissioning Authority (UK), IAEA, INPO (USA), I2EN(FRANCE), UK Government, AREVA, EDF, WESTINGHOUSE, AMEC and more than 90 other nuclear companies.

It has developed a High Quality Training Provider Network in the UK which includes University of Central Lancashire, University of Birmingham, University of Liverpool, University of Manchester and more than 50 University and Private institutions.

A comprehensive directory of UK Nuclear training providers will be available from the Skills Academy in early 2013 and will detail training and Research & Development capabilities for each provider including Universities and private institutions.



Safely delivering design and manufacture excellence from concept to reality

NIS Limited



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- Waste management
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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UK

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+44 (0) 1257 240799

Email:
sales@nisltd.com

Brief Organisation profile

NIS are a specialist integrated engineering company established in 1983, providing bespoke design and manufacture of plant and equipment by transfer of technology across a broad and diverse range of markets.

Our key objective is building on our 29 year history in provision of solutions to clients problems, using our experience and knowledge, while creating and maintaining world class performance. This is achieved by our continual pursuit of excellence.

Our people, environment, communities and industries are central to our core values and at the heart of everything we do, it's imperative to us that we deliver on our responsibilities. We do not just comply, we exceed, with nothing being more important to us than our safe, healthy workforce of around 200 people along with delighted customers and satisfied stakeholders.

Main products/services or technologies

NIS Ltd offers a full lifecycle engineering design service, from initial concept, optioneering and front end design, through to detail design, prototyping and manufacture implementation.

Our highly skilled multi-disciplinary design teams have a wealth of experience, derived from many years delivering design solutions across a broad and diverse range of industries, including Nuclear, Automotive, Food, Aerospace and Security.

Our conveniently located world class manufacturing facility is available to our clients, whether they are taking advantage of our complete 'design for manufacture' service or have chosen to engage us for 'build to print'.

A full product supply service is offered from manufacture to assembly, test, installation and commissioning.

The design and manufacture of bespoke equipment, or prototypes, is

one of our key strengths, but we recognise that this is often the first step on a journey towards mass production or further development work.

NIS work with various technologies including;

- Mechanical handling
- Robotics
- Welding technologies
- Control systems
- HVAC technologies

Experience/results, past clients

NIS clients are internationally recognised market leaders. Within our industrial sector we work with renowned organisations such as BAE Systems, L3 Communications, Mitsubishi (Lucite) and Nipon Sheet Glass (NSG) Pilkington. Within the nuclear sector our primary clients are the UK Nuclear Decommissioning Authority (NDA) Estate e.g. Sellafield and the Ministry of Defence (MOD) e.g. Atomic Weapons Establishment (AWE). Our contracts within these organisations are either direct or on behalf of international delivery providers such as AMEC, Babcock, Jacobs and Doosan Power Systems.

Specialist nuclear decommissioning, land remediation, environmental investigations and monitoring, waste management, transport consultancy service and site investigation services

Nprojx Ltd



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- Waste management
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Brief Organisation profile

New start-up business established in 2011 comprises of highly experienced self motivated staff and UK recognised expert associates. This business offers cost effective solutions with a focus on technical excellence through experience with bespoke client support service. We supply first class specialists with a wealth of experience, knowledge and a reputation for problem solving. Capital bond to be arranged by negotiation.

Main products/services or technologies

Our range of services includes:

- Environmental monitoring and assessment solutions for drain, bore holes, core sample voids, ducting and in plant pipework. GIS and GPS supported reporting. Calibrated instrumentation with a good track record of recent project success and innovation. This UK unique system is capable of monitoring bespoke environments (including underwater) from 100mm dia. to 600mm dia. at 150m in length. The systems has video capture, distance measurement and gamma spectroscopy. We have designed several systems to monitor low and high activity gamma environments (gross cps, net peak cps and dose rate)
- Decommissioning Site Restoration Advice
- Decommissioning Strategy & Operations
- Decommissioning Concept Schemes

- Decommissioning of Fuel Ponds and Reactor Halls
- Land Remediation & Land Quality Assessment
- Radiological Protection Service
- Waste Conditioning and Disposal
- Radioactive Waste Transport & Package Review
- Dangerous Goods Safety Advice

Experience/results, past clients

RSRL Harwell
Environmental monitoring of active drain system supporting site de-licensing programme.

Bradwell Magnox
Environmental monitoring of active drain system supporting site de-licensing programme.

Trawsfynydd Magnox
Environmental monitoring of cooling pond drain system supporting site remediation and de-licensing programme.

Priory Construction
Environmental monitoring of active drain system supporting site de-licensing programme.

NDSL provides a trusted, cost-effective and professional decommissioning service on nuclear sites in UK and Europe

NUCLEAR DECOMMISSIONING SERVICES LTD (NDSL)



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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forss@ndsl.eu.com

Brief Organisation profile

NDSL was established in 2001 to provide consultancy to the nuclear industry with emphasis on decommissioning. The Company started to undertake implementation work in 2006 and now has around 75 manual workers including decommissioning operatives, fitters, electricians, alkali metal workers, asbestos removal workers and health physics surveyors. The Company has its Head Office close to the Dounreay nuclear site in Scotland and currently 70% of the Company's work is for that site with 65 manual workers and 9 project engineers and managers working full time on that site. In addition the Company is currently providing a waste packing team to the Winfrith site, is repackaging sodium metal in Italy and has a full time engineer based at the EU Commission site at Ispra in Italy. Turnover in 2011/12 was £5.5M.

Main products/services or technologies

Nuclear Decommissioning Planning, Design and implementation.

This includes the preparation of Plant Decommissioning Programmes which show how a plant is to be decommissioned, the detailed design for various aspects of the work including how much waste of each category will be produced and how it will be packaged for disposal.

Nuclear Ventilation System Design, Installation and Commissioning.

This includes concept, scheme and detail design, design justification and substantiation.

Alkali Metal Repacking and Disposal.

This includes the assessment as to how the material should be extracted

from its current position, how it may be best packaged and how it should be destroyed given that alkali metal should not be stored due to its chemical reactivity.

Asbestos Survey and Removal.

The Company has a Health & Safety Executive licence for the removal and disposal of asbestos from both radiological and domestic/commercial buildings.

Provision of Seconded Manpower.

NDSL provides personnel to work as part of integrated teams at nuclear sites. These personnel can range from project managers to decommissioning operatives.

Experience/results, past clients

NDSL holds a number of current Framework Agreements:

- Provision of Professional Services to Dounreay Site Restoration Ltd (DSRL) (ex UKAEA)
- Provision of Decommissioning Operatives to Dounreay (DSRL)
- Provision of Decommissioning Services to Winfrith Research Sites Restoration Ltd (ex UKAEA) (RSRL)
- Provision of Project Management Assistance to EU Commission Joint Research Centre at Ispra (Italy) (Amec/EU Commission)
- Provision of Asbestos Removal to Highland Council

Clients include:

UKAEA (now DSRL and RSRL) / Magnox EU Commission / Weideraufarbeitungsanlage Karlsruhe Ruckbau und Entsorgungs GmbH (German company managing decommissioning of KNKII Reactor) / Orim S.p.A (Italian waste company) / Amec / James Fisher Nuclear Ltd / Highland Council

NES specialise in design, manufacture, assembly, test, commissioning and installation of bespoke solutions for nuclear decommissioning, new build and defence markets

Nuclear Engineering Services Limited (NES)



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
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 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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sales@nes-limited.com

Brief Organisation profile

NES has over 50 year's nuclear experience, with origins dating back to John Thompson and the supply of the first UK nuclear reactor housing to Dounreay.

Split across three locations, Wolverhampton – Head Office, Risley – Centre of Engineering Excellence and Beckermat – North West Division, NES' unique capabilities, facilities and experience ideally position us to take on a variety of projects on a national and international basis.

NES employs some 330 personnel, including 130 design engineers.

Significant strategic investments have been made across the business in recent years including the investment in state of the art CNC machining centers to expand the company's manufacturing facility, and the establishment of the NES North West Division, 2.5 miles from the Sellafeld Main Gate, the closest facility of its type.

Main products/services or technologies

Decommissioning

NES are currently tackling some of the largest technical challenges within the UK decommissioning program. NES is able to operate as a standalone contractor or take the lead as part of a larger framework.

Retaining all the required skills in-house, NES' innovative approach ensures all solutions are considered, before best value options pursued, managed and controlled through Integrated Project Teams (IPTs). Products and services:

- Remote lifting and handling equipment

- Fuel route equipment
- Gloveboxes and containments
- Waste size reduction
- Skid mounted process plant
- Process equipment

Defence

NES has 20 years' experience in delivering innovative, bespoke services and solutions to defence industries, building an excellent reputation and a loyal customer base. Typical contracts include remote handling and lifting equipment, fuelling/defueling plant, gloveboxes and enclosures, heat exchangers and critical spares.

New Build

Experience gained and involvement in nuclear operations across the UK ideally positions NES to meet the challenges and assist in the timely and safe delivery of international new build program's.

Experience/results, past clients

NES has supplied equipment to all UK Nuclear Power stations and are currently delivering a major contract for decommissioning equipment to Sellafeld on behalf of the NDA for three Silo Emptying Plant (SEP) Mobile Caves. Each machine weighs approximately 450 tonnes and will extract ILW from 22 vertical silos.

NES has also supplied equipment into other key customers including Magnox, EDF, Costain, Nuvia, Babcock and Amec. Products have included shield doors, fuel handling equipment, and Fuel Inspection Hot Cell equipment for Ignalina Nuclear Power Station in Lithuania.

NES are an approved supplier to the UK Ministry of Defence.

A Centre Of Excellence In The Delivery Of Nuclear Consultancy And Support Services

Nuclear Technologies (A Division of TUV SUD (UK) Limited)



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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www.nuclear.co.uk

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Phone:
+44 1847 805070

Fax:
+44 1847 805077

Email:
Agnes.ross@nuclear.co.uk

Name of distributor/agent in Japan:
TUV SUD Japan Ltd
Nobuhiko IWASAKI

Phone:
+81-3-3372-4937

Fax:
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Email:
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Brief Organisation profile

The company was founded in 1994 and had an annual turnover of £7M in 2011. We currently employ ~100 Consultants based in our offices throughout the UK and seconded into client sites.

Nuclear Technologies Plc was acquired by TÜV SÜD (UK) Ltd on 31st August 2006, thus providing us with access to international expertise from this major German organisation. TÜV SÜD Industry Services division supplies engineering, testing and inspection services for manufacturers and operators of process-engineering plants, buildings and infrastructural facilities as well as authorities and communities. Since then TÜV SÜD have acquired a number of additional companies in the UK. As such the TÜV SÜD (UK) Group of companies have now been brought together to consolidate and improve services such as Finance, IT, HR, Security etc, thus enhancing the day to day operations of each individual company. Consequently Nuclear Technologies now operate as a division of TUV SUD (UK) Ltd although we still operate as an independent business unit.

Many of our Consultants are internationally recognised experts with an outstanding record of achievement in the nuclear industry.

Main products/services or technologies

Nuclear Technologies is a leading supplier of professional scientific and engineering consultancy services to the Nuclear Industry, specialising in:

- Criticality & Shielding Assessment
- Radioactive Waste Management
- Environmental Management and Analysis
- Decommissioning Management
- Decontamination
- Safety Assessment, Safety Case Production and Peer Review
- Engineering
- Design Validation
- Radioactive Material Transport, Packaging and Storage Studies

Experience/results, past clients

Nuclear Technologies operate mainly in the UK but are also currently involved in the ITER project in Spain and on the new geological disposal facility for Andra in France.

We have also supported our parent company, TUV SUD, internationally on a number of nuclear projects for Russia, Germany, Korea and Japan. Specifically for Japan this included providing support to decommissioning planning at Tsuruga NPP, decommissioning estimating and we hosted a Japanese delegation on decommissioning in the UK.

Nuclear Technology Education Consortium Master of Science, Postgraduate Certificate, Diploma and Courses for Industry

Nuclear Technology Education Consortium



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
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School of Physics And Astronomy, Schuster Building, Brunswick Street, Manchester, M13 9PL, UK

Phone:
+44 161 275 4575

Email:
mel.young@manchester.ac.uk

Brief Organisation profile

Established 2005
The consortium comprises the Universities of Birmingham, Central Lancashire, Lancaster, Leeds, Liverpool, Manchester and Sheffield, City University, London, Defence Academy - College of Management and Technology, Imperial College London and UHI Millennium Institute.

The structure and content of the programme, which leads to qualifications up to Master's level in Nuclear Science & Technology, was established following extensive consultations with the nuclear industry, regulators and Government Departments.

All the modules are delivered by direct teaching but the following have been converted into a distance learning format as an alternative method of delivery to provide greater choice for students:

- N01 Reactor Physics, Criticality & Design
- N02 Nuclear Fuel Cycle
- N03 Radiation & Radiological Protection
- N04 Decommissioning / Waste / Environmental Management
- N07 Nuclear Safety Case Development
- N10 Processing, Storage and Disposal of Nuclear Wastes
- N12 Reactor Thermal Hydraulics
- N13 Criticality Safety Management
- N29 Decommissioning Technology & Robotics
- N31 Management of the Decommissioning Process

Main products/services or technologies

The programme has been designed specifically for the needs of the nuclear industry.

It offers an extremely broad portfolio of subjects, including decommissioning to waste disposal & storage.

It is ideal for employee development: each module may be taken as a standalone short course for Continuing Professional Development purposes.

Great flexibility: the modular format

allows students to undertake an M.Sc. on a part-time basis over a period of 3 years as well as full-time in 1 year.

Students may also undertake a Postgraduate Diploma or Postgraduate Certificate within the framework of the programme.

Each of the modules contains the same syllabus as its counterpart delivered by direct teaching and has the same learning outcomes.

They are available once a year at a fixed time in order to facilitate the concept of a 'virtual classroom'. A web-based Virtual Learning Environment provides access from anywhere in the World. It includes course handbooks, course content, timetables, discussion groups, video clips and email.

Experience/results, past clients

Previous students have been from Canada, Sweden, France, South Africa, Finland, Ireland, Netherlands, Lebanon, China, Malaysia, Austria, Nigeria, United Arab Emirates and Kazakhstan.



Snake-arm robots – robots for confined and hazardous spaces

OC Robotics



Brief Organisation profile

OC Robotics (established 1997, 15 employees) has world leading robot technology. The company is focused on providing automation for high value confined spaces including nuclear aerospace and industrial machines.

Main products/services or technologies

SNAKE-ARM: We have developed a new type of remote handling manipulator called a snake-arm robot. These are multi-jointed, wire rope drive robots that can nose-follow into confined spaces. The design is particularly relevant to high radiation areas as drive motors and electronics can be located 'outside' in a man-accessible area. These robots have particular relevance for inspection and conducting work within the Torus Room, PCV and RPV. The robots have been used for many remote handling tasks including, inspection, gripping and handling, water-jetting, cutting

with lasers, NDE and process applications.

MOBILE VEHICLE PLUS SNAKE-ARM: A vehicle plus snake-arm has applications in all areas of the Fukushima plant.

REMOTE CONTROL SYSTEM: In the course of developing snake-arm robots, OC Robotics has also developed software and electronics architectures for long distance remote control of hardware over fibre LAN; advanced graphical user interfaces; and, data management software.

OC Robotics also offer remote handling consultancy services.

Experience/results, past clients

OC Robotics has developed and delivered equipment to Ringhals (Sweden) and Pickering (Canada) Nuclear Power Plants. Trials have been conducted with Areva, Sellafield and EDF. Further details including case studies and videos are available at www.ocrobotics.com.



>>>Products and Services

- Decommissioning
 - Post-operational clean-out (POCO)
 - Decontamination
 - Dismantling
 - De-energising & demolition
- Waste management
 - Waste processing, conditioning & passivation
 - Waste storage & transport
 - Waste disposal (licensing / repository)
- Site restoration
 - Site radiological assessment & material sorting
 - Environmental remediation (land / groundwater)
 - Post clean-up release surveys

>>>Company Information

Website address:
www.ocrobotics.com

Address:
Unit 4, Abbey Wood Business Park, Filton, Bristol, BS34 7JU, UK

Phone:
+44 117 3144700

Email:
rob@ocrobotics.com
(Rob Buckingham)

Name of distributor/agent in Japan:
eEnergy Corporation

Address:
7-19, Akasaka 1-chome, Minato-ku, Tokyo 1070052, Japan

Email:
sawamoto@e-energy.co.jp
(Masahiro Sawamoto)

We shape a better world

Ove Arup & Partners Hong Kong Ltd



Brief Organisation profile

Arup is the creative force at the heart of many of the world's most prominent projects in the built environment and across industry. We offer a broad range of professional services that combine to make a real difference to our clients and the communities in which we work.

We are truly global. From 90 offices in 35 countries our 10,000 planners, designers, engineers and consultants deliver innovative projects across the world with creativity and passion.

Founded in 1946 with an enduring set of values, our unique trust ownership fosters a distinctive culture and an intellectual independence that encourages collaborative working. This is reflected in everything we do, allowing us to develop meaningful ideas, help shape agendas and deliver results that frequently surpass the expectations of our clients.

Industrial Engineering, Project Management, Venue Consultancy, Drainage and Sewerage, Infrastructure, Railways, Water Engineering

Experience/results, past clients

Sedgemoor Hinkley Point C Planning Consultancy, DTI/BERR UK NPP Siting Assessment, Muhleberg KKM-2 Nuclear Power Station Feasibility Study, Sellafield Box Encapsulation Product Plant Store Import/Export Facility, Engineering and Technical Support to Sizewell B, Trawsfynydd Nuclear Power Station Decommissioning Design, Nuclear Power Plant Layout and Configuration Study, Sellafield Nuclear Installation Inspectorate – Contamination Technical Support

>>>Products and Services

- Decommissioning
 - Post-operational clean-out (POCO)
 - Decontamination
 - Dismantling
 - De-energising & demolition
- Waste management
 - Waste processing, conditioning & passivation
 - Waste storage & transport
 - Waste disposal (licensing / repository)
- Site restoration
 - Site radiological assessment & material sorting
 - Environmental remediation (land / groundwater)
 - Post clean-up release surveys

>>>Company Information

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<http://www.arup.com>

Address:
Level 5, Festival Walk, 80 Tat Chee Avenue, Kowloon Tong, Hong Kong

Phone:
(852) 2268 3457

Fax:
(852) 2268 3970

Email:
peter-a.thompson@arup.com

Name of distributor/agent in Japan:
Ove Arup & Partners Japan Ltd.

Address:
3F Tobu Fuji Bldg, 24-4 Sakuragaoka-cho, Shibuya-ku Tokyo, 150-0031

Phone:
+81 70 6997 2875

Fax:
+81 3 3476 1377

Email:
Arata.Oguri@arup.com

Main products/services or technologies

Total Engineering Design Services for Acoustics and Vibration, Economics and Planning Information Technology, Research and Development, Advanced Technology, Economic Studies, Life Cycle Costing, Risk Management, Airports, Energy, Manufacturing, Risk and Safety Services, Audio Visual, Environmental Services, Maritime, Security Engineering, Bridges, Environmental Studies, Material Technology, Seismology, Buildings, Facade Engineering, Mechanical Engineering, Site Appraisal, Communications, Facilities Management, Electrical Engineering, Structural Engineering, Construction Management, Fire Safety Engineering, Oil and Gas, Transportation Planning, Construction Planning, Foundation Engineering, Power Plants, Tunnels, Controls and Commissioning, Geotechnics, Project Development, Urban and Regional Plan, Cost Management, Highways, Project Feasibility, Value Management, Design Management,

Provelio Nuclear Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys
- **Other**
 - ▶ Real Estate and Management Services to the Nuclear Industry

>>>Company Information

Website address:
www.provelio.com

Address:
The Meeting House, Lewins Mead, Bristol, BS1 2NN, UK

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+44 (0) 117 302 0001

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+44 (0) 117 302 0002

Email:
andy.slaney@provelio.com

Brief Organisation profile

Provelio Nuclear Ltd view land, property, plant, people and time as finite and valuable resources and aim to derive as much value as possible from these. Working alongside our clients we aim to challenge conventional thinking, drawing on experiences gained both inside and outside of the nuclear industry. Provelio Nuclear is a sister company of Provelio Ltd, a consultancy company specializing in the provision of management advice to the estates and construction industries.

Main products/services or technologies

Real Estate

- Strategy Advice and Planning
- Business Change Management and Benefits Realisation
- Investment Appraisal and Business Case Development
- Procurement and Framework Advice
- Risk Management
- Business Rate Management
- Acquisition and Disposal of Properties and Land
- Landlord and Tenant
- Service Charge Administration

Organisation

- Organisational Review
- Management Systems and Processes
- Roles and Responsibilities Analysis
- Training
- Organisational Health and Safety Management

Facilities Management

- Hard and Soft Services
- Performance Management
- Procurement and Contract Administration
- Space Analysis
- Statutory Compliance
- Health and Safety Management
- Minimisation, re-use, recycling, treatment and disposal of complex waste streams

Programme and Project Management

- Strategy, Controlled Delivery, Evaluation and Feedback
- Procurement and Contract Advice
- Value and Risk Management
- Infrastructure, Engineering and Specialist Equipment Management
- Intervention, Recovery, Project Assurance and Audit Services
- CDM-C Consultancy Services

Development Management

- Development Appraisal
- Town and Country Planning Management
- Commercial Structures
- Fund Monitoring

Experience/results, past clients

Provelio Nuclear acts for Magnox Limited providing real estate management services across the UK. This includes one operational nuclear power station, nine stations in various stages of decommissioning, one hydroelectric station and various conventional facilities. One of the founders of Provelio Nuclear has worked closely with the Japanese Waste Industry via close association with Panasonic and their world leading recycling facility, METEC. This association was in his capacity as director of a previous company. Close links still remain both within Japan and large parts of Europe.

Pursuit Dynamics PLC (PDX)



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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www.pdx.biz

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Fax:
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Email:
david.crouch@pdx.biz

Brief Organisation profile

Pursuit Dynamics Plc. (PDX) is a UK based intellectual property and Technology Company that is actively commercializing its Vapour Jet Technology based products within multiple market sectors. PDX decommissioning products support emergency responders across the globe, providing rapid and effective full spectrum nuclear and radiological decontamination with minimal liquid use.

Broad chemical capability, coupled with super-fine droplet generation and complete non-line of sight coverage, affords complete threat mitigation within a single PDX system.

We provide portable and mobile decontamination solutions both being equipped with our patented Vapour Jet technology that generates micro droplets to ensure even and consistent coverage. Covering the entire nuclear threat spectrum PDX Vapour Jet Technology is compatible with diverse range of decontaminants including:

Main products/services or technologies

First Response System (FRS)

Offering lightweight and cost effective decommissioning the FRS is a highly mobile and robust back pack designed for maximum operational flexibility. The perfect nuclear decommissioning solution in localized environments, for light vehicles and for personnel providing pressurized air, chemical agent and discharge module all in one unit.

N 800 Area and room decommissioning

Our larger integrated wide-area (~2000m³) solution combines our technology with true operational level decommissioning capability and excellent rapid room filling capacity.

Suitable for large scale infrastructure and heavier items of military equipment the mobile stand-alone system compliments the FRS in providing the end user with a complete CBRN capability.

PDX continues to contribute to important advances in aerosol delivery and decontamination technology.



Raddec (Radiochemical & Decommissioning Solutions) supplies innovative extraction instruments to support nuclear waste characterization (for extracting ¹⁴C, ³⁶Cl, ¹²⁹I & tritium)

Raddec International Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Fax:
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Email:
sales@raddec-int.com

Brief Organisation profile

Raddec Limited, established in 2003, is a small specialized producer of innovative instruments for extracting volatile radionuclides from decommissioning and environmental materials.

Raddec instruments are used in nuclear, research, defence and commercial laboratories worldwide. The systems have been developed following rigorous testing to ensure rapid extraction of tritium, C-14 and halogens from diverse materials including decommissioning wastes (concrete, graphite, metal, insulation, etc) and environmental materials (soils, biota).

The Pyrolyser multi-tube extraction systems are fully integrated, space-efficient instruments that incorporate controllable heating, metered air and oxygen flows, catalytic oxidation and an extraction chain to quantitatively trap fully-oxidised sample decomposition products. Up to 6 samples can be extracted at one time over a period as short as 2 hours.

Raddec has expanded its instrument range to include a Hyperbaric Oxidiser to facilitate rapid decomposition of organic matrices.



Main products/services or technologies

- Pyrolyser-2, Pyrolyser-4 and Pyrolyser-6 extraction systems
- HBO Hyperbaric Oxygen Decomposition System

Experience/results, past clients

Raddec instruments are used in leading nuclear, research, defence and commercial laboratories worldwide. The systems have been developed following extensive testing in a university research environment. Their effectiveness is underpinned by publications in the international scientific literature.

Over 50 systems are installed worldwide (USA, UK, S. Korea, China, Sweden, France, Switzerland). Several clients operate up to 5 systems in a single laboratory.

A dynamic and flexible solution to radiological safety

Radwise Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Phone:
+44 (0) 1294 318375

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davidmcbride@
radwiselimited.co.uk

Brief Organisation profile

Radwise were formed in 2000 to provide radiological protection support services to the nuclear industry. With currently over 250 personnel working across 14 locations in the United Kingdom, we are a Tier 2 supplier to the NDA Supply Chain. Anticipated turnover for year ending January 2013 is approx. £14.5M, January 2014 is approx. £19M.

Main products/services or technologies

Our Services

With a highly competent and motivated workforce delivering a high level of customer satisfaction, Radwise can provide the services of:

- Health Physicists
- Health Physics Support Managers
- Health Physics Supervisors
- Health Physics Decommissioning Operatives
- Health Physics Technicians
- Health Physics Support Technicians
- Health Physics Trainers

Our Capabilities

Radwise have gained extensive experience in the field of radiological protection services over the years by focusing on working together with our clients to ensure the best service is provided. Radwise can provide radiological protection personnel with considerable experience in areas such as:

- Reactor Operational Support
- Reactor Projects Support
- Reactor Outage - Balance of Plant Support

- Reactor Outage - Reactor Vessel Entry Support
- Reactor Outage - Fuel Route Support
- Nuclear Facilities Decommissioning
- Land Remediation
- Borehole Surveys
- Nuclear Submarine Re-fuelling
- Nuclear Submarine Refurbishment

Experience/results, past clients

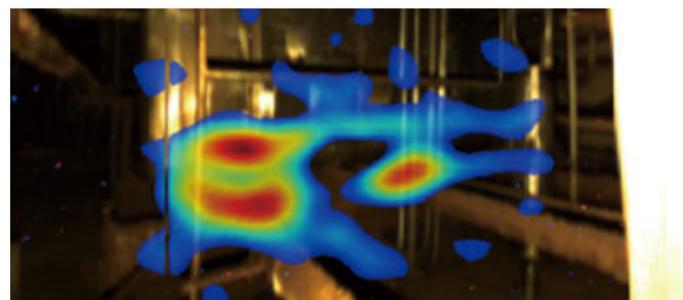
We have held a Framework Agreement with Magnox since 2003 (successfully retendered in 2007) to provide services across the majority of their sites. This Framework Agreement was superseded by the NDA Estates Contract - 'Health Physics and Radiological Monitoring Control Services', for which Radwise tendered for and won 3 Lots.

Framework Agreement with EDF Energy since 2010 to provide services to the majority of their sites. Support provided to EDF at present is mainly 'Balance of Plant' during statutory outage programmes; there are a few EDF sites (Dungeness, Hinkley & Sizewell) where we provide all year round support.

Nuclear decommissioning consultancy services, from strategic level to project implementation, including the unique and world-beating N-Visage™ radiometric modelling technique

REACT Engineering Ltd

REACT
ENGINEERING LIMITED



>>>Products and Services

- ▶ **Decommissioning**
- ▶ Post-operational clean-out (POCO)
- ▶ Decontamination
- ▶ Dismantling
- ▶ De-energising & demolition
- ▶ **Waste management**
- ▶ Waste processing, conditioning & passivation
- ▶ Waste storage & transport
- ▶ Waste disposal (licensing / repository)
- ▶ **Site restoration**
- ▶ Site radiological assessment & material sorting
- ▶ Environmental remediation (land / groundwater)
- ▶ Post clean-up release surveys

>>>Company Information

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+44 (0)1946 813778

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+44 (0)1946 814102

Email:
mail@react-engineering.co.uk

Brief Organisation profile

REACT is a leader in developing innovative and robust engineering and management solutions to address the nuclear decommissioning, waste management and asset care challenges faced by the UK nuclear industry.

The company was established in 1994 "to make nuclear clean-up happen through provision of creative engineering solutions and independent challenge". Based near Sellafield, the UK's largest nuclear facility, REACT now employs around thirty engineers and has also generated several sister companies, each developing pioneering technologies. N-Visage™ is one such technology, which is undergoing constant development.

REACT has built up an exemplary reputation and wide customer base within the UK. It will continue to apply its world class decommissioning knowledge and experience, through independence and innovation, to the greatest challenges in the nuclear sector.

Main products/services or technologies

N-Visage™ is a patented modelling technique that predicts the location and size of radiation source terms within a 3D model of a facility. The model can be manipulated, through the shielding or reduction/removal of sources, and revised dose maps produced.

The technique allows projects to understand complex dose environments and to identify remediation strategies underpinned by accurate dose estimates.

The technique has proven itself to be a high value, often "game

changing", service that is delivered within REACT's established core of nuclear consultancy expertise.

The N-Visage™ consultancy service includes the entire project life cycle;

- Problem definition and identification of plant characterization strategy.
- Design and delivery of plant survey. Data gathering techniques can range from existing, installed radiometrics to the fully automated N-Visage™ Gamma Imager for remote deployments in high dose areas.
- Identification and quantification of source terms.
- Modelling of interventions.
- Development of feasible remediation strategies.
- Delivery through Project and Risk Management services.

Experience/results, past clients

One of the N-Visage™ projects already completed;

- Decommissioning plans for a non-man access area in an operational plant assumed that remote operations were necessary, with high costs and durations.
- The N-Visage™ Gamma Imager was deployed remotely into the area. Gamma images, dose rates and isotopic information were recorded.
- Analysis of the information proved that with an appropriate clean out of vessels in the area, targeting certain isotopes, manually supported semi-remote decommissioning would be possible.
- This knowledge removed uncertainty and risk in the clean out and decommissioning plans, potentially saving tens of millions of pounds.

The leading manufacturer of chemical, particulate and respiratory protective solutions

Respirex International Limited



>>>Products and Services

- ▶ **Decommissioning**
- ▶ Post-operational clean-out (POCO)
- ▶ Decontamination
- ▶ Dismantling
- ▶ De-energising & demolition
- ▶ **Waste management**
- ▶ Waste processing, conditioning & passivation
- ▶ Waste storage & transport
- ▶ Waste disposal (licensing / repository)
- ▶ **Site restoration**
- ▶ Site radiological assessment & material sorting
- ▶ Environmental remediation (land / groundwater)
- ▶ Post clean-up release surveys

>>>Company Information

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www.respirexinternational.com

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Fax:
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Email:
info@respirex.co.uk

Name of distributor/agent in Japan:
Morita Technos Corporation

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Japan

Phone:
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Fax:
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Email:
Hiroshi.Yanagi@morita119.com

Brief Organisation profile

Respirex are a world leading supplier of personal protective solutions, specialising in the design and manufacture of high-performance chemical, particulate and respiratory protective clothing. Founded in 1957, Respirex started the manufacture of chemical protective clothing in 1978 for the petrochemical industry and established our UKAS accredited testing laboratory in 1994.

Since moving to our current Redhill factory in 1997 the company has grown steadily and opened a new automated boot factory in Reigate in 2010. The company now employs 100 full time staff and has a turnover of £8.5 million.

Main products/services or technologies

Our product range encompasses gas tight suits, chemical splash suits and CBRN equipment for fire and emergency services teams and emergency responders; air-fed chemically protective suits and chemical work wear for the petrochemical and pharmaceutical industries and particulate suits and hoods for nuclear and pharmaceutical industries. Our state of the art automated footwear factory produces

a range of protective boots and overboots providing protection from hazardous chemicals and high voltages, along with specialist food industry boots and general safety boots.

We are unique in offering a complete service that includes standard or tailored equipment solutions combined with unrivalled training, aftercare and support.

Experience/results, past clients

Nuclear power generation, decommissioning and fuel manufacturing clients for our particulate garments include: Sellafield (UK), Magnox Limited electricity generation (UK), Springfields Ltd [Westinghouse] (UK), LLW Repository (UK) and Savannah River (USA).

We supply gas tight suits to fire and emergency teams around the world, including the London Fire Brigade (UK), Ministry of Defence (UK), N.S.W. Fire brigade (Australia), Fire and Rescue Department of Malaysia (Malaysia).

Clients for our chemical protective suits and workwear include: Exxon, BP, Shell, Total, Pemex and PDVSA.



Well established, independent, specialist safety and risk management consulting and training company. Clients - major hazard industries, commercial, public sector

Risktec Solutions Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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+44 925 611200

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+44 925 611232

Email:
enquiries@risktec.co.uk

Brief Organisation profile

Established 2001. 13 Offices World Wide (Middle East and North America). 200 Employees, plus Associates through our Agency Division ASTEC. Annual Turnover £25M. We assist clients in major hazard industries and commercial and public sectors to manage health, safety, security, environmental and business risk.

Risktec has its principal office in Warrington in the UK, centre of UK Nuclear Engineering. Risktec is owned by its employees, hence promoting stability and involvement. 2010 Risktec ranked 93rd fastest-growing private company in the UK, 80th in the Sunday Times International Track 100 of British firms with the fastest-growing overseas sales.

We are privileged to have worked with many of the world's best companies as clients in the civil nuclear market.

Main products/services or technologies

- Training and education in Safety and Risk Assessment (including formal post graduate qualifications)
- Safety Case Production and Management (Decommissioning and Operations)
 - Hazard Identification
 - Consequence and Frequency Assessment
 - Fire & Explosion Assessment
 - Physical Effects Modelling
 - Human Factors in Design & Operations
 - Deterministic Assessment
 - Fault Tree and Event Tree Analysis
 - Probabilistic Safety Assessment
 - Safety Integrity Level Assessment
 - Health, Safety and Environmental

Management Systems

- Risk Reduction & ALARP Justification

- Substantiation Reports
- Accident & Investigation Analysis
- Production / review works test documents and operator procedures
- Emergency Response Planning
- Competency Management, Culture & Behaviour
- Periodic Safety Review
- INSA/Peer Review
 - Independent Nuclear Assessment
 - Independent Technical Assessment
- Licensing Support
- Project Management

Experience/results, past clients

Risktec/John Moores University M.Sc.

Bespoke training & education programme to Federal Authority for Nuclear Regulation (UAE nuclear regulatory body). The training/education programme is part of the FANR organisational capacity building activities and has led to post graduate qualifications (PgCert; PgDip; MSc) for FANR personnel.

EDF Energy, AECL, Eskom, FANR (UAE nuclear regulatory body), British Energy, Rolls-Royce, NUKEM GmbH, Shell, Agip, BP, Magnox Sites, NDA, GE Healthcare, NNB Genco, Horizon Nuclear Power, Westinghouse, AWE, AON, RWE NPower, MoD, Deutsche Bank, Rolls-Royce BG Group, Infinergy, Diageo, Peel Energy, Beazley Group, Thales, London Underground, Network Rail

Sellafield, Berkeley, All Magnox sites.

Mataco is a cloud-based solution which offers standards compliant business continuity plan management, exercising and review

Savant Limited



Brief Organisation profile

Savant Limited was established in 1986 and now employs 41 people and has a turnover of £3.5M per annum. We have a team of over 40 highly trained and experienced professionals providing both development and consultancy services.

We have long established relationships with our clients and pride ourselves on the quality of our work and our commitment to understanding and meeting our clients' requirements.

Savant Limited is accredited to ISO9001:2008 and ISO27001:2005.

We have provided life critical software development and support services to a range of customers for over 25 years.

We have over 25 years of experience in providing support for business critical systems. We work in partnership with our clients to understand their requirements and deliver quality solutions.

Main products/services or technologies

Sellafield Limited is one of a range of clients we are helping to continue to serve its customers when hit by interruptions like snow, flood and flu. We do this with business continuity software and consultancy. Our Mataco product is web based and offers standards compliant business continuity plan management, exercising and review. With its mobile access, Mataco ensures you can get at your plans and documents whenever you need them.

Many organisations use Mataco to store all the core data relating to their business in a single secure online database, that enables dependencies between the data to be easily identified and reported on. Mataco enables templates to be set up in one place to reuse in many Plans and Reports, which ensures consistency and significantly speeds up the process.

Mataco supports the full BCP

process as defined in BS25999, ISO22301 and the BCI's GPGs, including plan generation, review, audit and exercising.

Experience/results, past clients

Other Mataco customers include:

- Sellafield Limited
- PRS for Music
- Kent County Council
- Higher Education Funding Council for Wales
- General Pharmaceutical Council

Other clients include:

- British Medical Journal
- National Health Service Blood and Transplant
- Northern Ireland Blood Transfusion Service



Giving robots fully-human hands so they can operate dexterously on behalf of humans

Shadow Robot Company Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.shadowrobot.com

Address:
251 Liverpool Road, London, N11LX

Phone:
+44 207 200 2487

Email:
contact@shadowrobot.com

Name of distributor/agent in Japan:
Nihon Binary

Address:
Sumitomo Shibaura Bldg
9 Floor, 4-16-36 Shibaura,
Minato-ku, Tokyo, Japan

Phone:
+ 81-3-5427-7111

Fax:
+ 81-3-5427-7123

Email:
yoshi@nihonbinary.co.jp

Brief Organisation profile

Shadow was founded in 1997 by a group of independent robotics researchers. It now has 22 staff primarily in London, and provides robotics research and consultancy as well as manufacturing robotic hands and other components for researchers all over the world. The company is almost entirely employee-owned.

Main products/services or technologies

Shadow's key technology is the Dexterous Hand, the most advanced human-like robotic hand available. This can be used on a wide range of robotic systems, to give them dexterous manipulation capabilities comparable to a human, allowing replacement of the human in difficult, dirty or dangerous tasks. It can be controlled directly from a remote glove (see image) or from software systems.

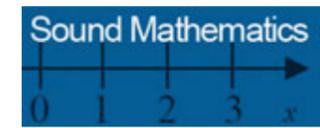
Shadow also actively works with partner organisations to explore applications for robotic manipulation and develop new technologies in that area.

Experience/results, past clients

Shadow's research systems are currently in use at NAIST and at Akita University in Japan. Please contact our distribution partner for references.

Semi-analytical modelling of ultrasonic inspection, including advanced mixed image/signal processing codes for defect characterisation

Sound Mathematics Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys
- **Other**
 - ▶ Joint development of novel software solutions for ultrasonic NDT

>>>Company Information

Website address:
www.ultrasoundmathematics.com

Address:
11 Mulberry Clouse,
Cambridge CB4 2AS, U.K.

Phone:
+44 7885543003

Email:
l.fradkin@soundmathematics.com

Brief Organisation profile

Sound Mathematics Ltd. was founded in 2009 by Professor Larissa Fradkin. It inherited from the Waves and Research Group based at London South Bank University that Professor Fradkin ran from 1993 to 2009. It is a micro-company usually employing – apart from Professor Fradkin – one more senior research scientist. Being an R&D company South Mathematics just uses a working capital of about £30,000.

Main products/services or technologies

Joint development of novel software solutions for ultrasonic NDT

Experience/results, past clients

Sound Mathematics Ltd. was founded in 2009 by Professor Larissa Fradkin. It inherited from the Waves and Research Group based at London South Bank University that Professor Fradkin ran from 1993 to 2009. The company's main clients are British Energy – now EDF and CEA, France. British Energy is using the company's subroutines for assessing chances of detecting a large back-wall crack using ultrasonic NDT.

Collaboration with CEA is on-going, with the company contributing subroutines to CIVA, a well-known software package for simulating NDT&E. The company also collaborates with Doosan Power Systems, developing novel semi-

automatic solutions for defect characterisation.

Structure Vision Ltd provides the world's first Nuclear Decommissioning software - NuPlant™ - for simulation and optimization of decommissioning liabilities and costs

Structure Vision Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ **Dismantling**
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ **Waste processing, conditioning & passivation**
 - ▶ **Waste storage & transport**
 - ▶ **Waste disposal (licensing / repository)**
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.structurevision.com

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Leeds Innovation Centre, 103 Clarendon Road, Leeds LS2 9DF

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Fax:
+44 870 126 3201

Email:
info@structurevision.com

Brief Organisation profile

Structure Vision Ltd was established in 2003 as a spin out from the University of Leeds, Institute of Particle Science and Engineering. Our first software product - DigiPac™ - was formed from years of research into the characteristics of powders and particles. Early research and development was supported by, among others, BNFL, British Nuclear Group and the Nuclear Installations Inspectorate. This then led to the development of NuPlant™ - specifically designed to address the needs of the Nuclear Decommissioning community.

Structure Vision Ltd is privately owned. The Chairman of the board is Neville Chamberlain CBE, previously CEO of BNFL and Chairman of Urenco. Other Directors include Dr Peter Watson OBE, previously CEO of AEA Technology and Professor Richard Williams OBE, joint founder of the company and Pro-Vice Chancellor at the University of Birmingham.

Main products/services or technologies

We provide software licenses and services based around our two main product lines:
NuPlant™ provides a new approach to decommissioning a nuclear facility. It is specifically designed to address the needs of decommissioning contractors, site operators, reactor vendors and utilities in planning, optimizing and estimating the costs of decommissioning complete facilities.

NuPlant™ is based around a powerful 3D virtual reality model of the nuclear plant. It can be used to determine optimal cutting, dismantling and packing schemes for active nuclear wastes, and perform dose uptake analysis for radioactive sources.

DigiPac™ is our original product which can be used to model the structure and determine the properties of various particulate systems. Its unique feature is the

ability to accurately model particles of arbitrary shape and size, from nanoparticles to large objects. It has particular applications in the chemicals industry for catalyst pellet analysis, pharmaceutical powders and fast moving consumer goods.

We can also provide scanning of powder and particle samples to a resolution of 20 nanometres.

Movies of our products in action are available at www.youtube.com/user/StructureVisionLtd

Experience/results, past clients

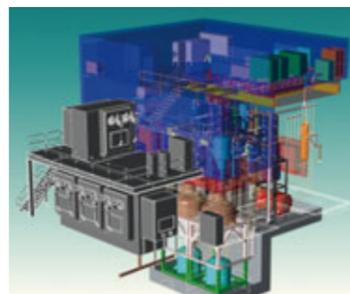
We have a number of existing customers for both our services and software. These include the following for NuPlant™:

- Sellafield Ltd
- National Nuclear Laboratories
- National Institute of Physics and Nuclear Engineering, Romania
- SOGIN, Italy
- Energy Solutions
- Nuvia Ltd
- Low Level Waste Repository Ltd

NuPlant™ has been used to model the decommissioning of facilities ranging from small laboratories, waste silos, to entire PWR reactors for these customers. It is also applicable to new build facilities to accurately predict, plan and cost the future decommissioning.

Our DigiPac™ customer's include:

- Johnson Matthey Catalysts
- Albemarle Catalysts
- Air Liquide
- Proctor and Gamble
- Pfizer
- Shell
- YARA



We work in partnership with our customers to deliver multi-disciplinary engineering and manufacturing expertise from one of the UK's largest production facilities

Tata Steel Projects



>>>Products and Services

- **Decommissioning**
 - ▶ **Post-operational clean-out (POCO)**
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ **Waste processing, conditioning & passivation**
 - ▶ **Waste storage & transport**
 - ▶ **Waste disposal (licensing / repository)**
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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+44 (0)1900 601111

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tsp@tatasteel.com

Brief Organisation profile

Tata Group comprises over 90 operating companies in seven business sectors: Communications and Information Technology / Engineering / Materials / Services / Energy / Consumer Products / Chemicals.

The group has operations in more than 80 countries across six continents. The total revenue of Tata companies, taken together, was \$67.4 billion in 2009-10, with 57 per cent of this coming from business outside India. Tata companies employ around 400,000 people worldwide.

Tata is the UK's largest manufacturer and industrial assets owner and provides engineering and consulting services to the nuclear, rail, energy, automotive and waste sectors. Tata Steel is one of the Tata Group's flagship companies.

Tata Steel is a member of the Nuclear Institute and the Nuclear Industry Association. Tata Steel is also a founder and tier 1 member of the Nuclear Advanced Manufacturing Research Centre.

Main products/services or technologies

Tata Steel Projects have a long standing history of supplying nuclear waste transport and spent fuel flasks and are actively involved in producing effective solutions that improve processes, using value engineering and the latest technology.

Projects have typically involved design, manufacture, testing and commissioning of waste storage, handling and decommissioning equipment, shield doors and gamma

gates to industry quality standards.

We offer a multi-disciplinary design consultancy service, resulting in cost-effective, fit-for-purpose solutions to the nuclear industry.

With many years experience in equipment manufacture, we can provide a complete design life cycle, from concept through to detail design using the latest 3D modelling design software, backed up by AutoCAD, Bentley Micro Station and REVIT.

We also offer a fully comprehensive test rig facility providing a design, construction, operation and testing service.

Our extensive engineering facility, which is one of the largest in the UK, incorporates:-

- 2 x 5m pits
- 130te craneage
- 13m crane clearance

Experience/results, past clients

Tata Steel have supplied six transport flasks for the Tokyo Electric Company (TEPCO) in Japan. The total project was secured by a consortium comprising; Sellafield Ltd. Marubeni and Kobe Steel.

Sellafield Ltd. is a major client of Tata Steel. Projects included; manufacture of flasks, gamma gates, test rigs, control panels, shield doors, bespoke systems, handling equipment and lifting and transport frames.

We also have prestigious clients such as Rolls Royce and BAE Systems who are regular clients of Tata Steel, and have recently been awarded a contract from International Nuclear Services (INS) to manufacture six transport frames.

Custom technology development company skilled at taking technology developed for other markets and applying them to nuclear decommissioning

The Technology Partnership plc



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Phone:
+44 1763 262626

Fax:
+44 1763261582

Email:
Chris.hole@ttp.com

Name of distributor/agent in Japan:
Kazushi Watanabe

Address:
1-41-7 Sanno, Ota-ku, Tokyo
143-0023

Phone:
+81 (0)3 3774 8791

Email:
Kazushi-watanabe@nifty.com

Brief Organisation profile

TTP is a specialist technology development company founded 25 years ago and employing some 300 skilled engineers and scientists located near Cambridge UK.

We develop technologies for our customers in areas as diverse as medical devices, wireless communications, electromagnetic sensors, optics and lasers, biological instruments, high volume consumer goods and high performance electronics and computing. In nuclear we have recently done development work for key UK decommissioning tasks at Sellafield and for monitoring intermediate level nuclear waste in long term storage.

We are always interested to work on unique one-off problems such as Fukushima and because we specialize in development only we are happy to either manufacture small numbers of the devices we design ourselves or provide the design to other companies wanting to make larger numbers commercially.

Main products/services or technologies

Our main expertise is in Physics, mechanical and electrical/electronic engineering. As examples we have developed in-line sensors for solid particle size and number in materials as diverse as crude oil and chocolate. We have strong expertise in sonics and ultrasonics which is relevant to non destructive testing and controlled sludge mobilization and have advanced numerical simulation skills

to model processes such as flow through porous media and settling.

In optics we have produced low cost head-up displays able to project information into a person's field of view while carrying out a decommissioning task and have developed 3D laser scanning systems which would be able to determine the arrangement of debris from a safe distance.

Our wireless communications group specializes in communications in difficult environments such as large concrete and steel structures enabling systems based on standard technology to work better in such environments.

We also have a strong track record in low cost and disposable health monitoring devices.

Experience/results, past clients

TTP currently does about 10% of its work for Japanese companies in Japan. We regularly travel to Japan on business and have Japanese speakers on staff.

Many of the companies we have worked for require confidentiality but companies we can cite as examples include: NEC, Zebra, Terumo, Panasonic, Ryobi, Fuji Film, Fumakilla, Canon, Daikin, Sharp, Horiba, Ricoh and Dai Nippon Screen.

TIS Cumbria offers engineering support inclusive of Manufacturing of high integrity pipework, CNC machining, fabrication and welding, with full Non destructive testing services

TIS Cumbria Limited



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.tiscumbrialtd.com

Address:
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Howe Industrial Estate,
Workington, Cumbria UK
CA14 3YW

Phone:
+44 (0)1900 65752

Fax:
+44 (0)1900 601174

Email:
enquiries@tiscumbrialtd.com

Brief Organisation profile

TIS Cumbria LTD is a Engineering company based in Workington who have extensive capabilities which include stainless and carbon shops for fabrication of pipework and structural components with over 30,000sq ft of workshops, CNC machining, full NDT services, industrial x-and gamma radiography, ultrasonic testing, MPI, DPI, CSWIP weld inspection, together with the latest portable PMI equipment complimented with a design capability office using Autocad 2011 Inventor and Autocad Solid 3D software. We have extensive experience in supplying and supporting the Nuclear sector with decommissioning solutions and others with high quality products with a proud record of apprentice training through the Nuclear Skills academy. The company is managed by a team of engineers with extensive knowledge of engineering used daily in the Nuclear sector.

Main products/services or technologies

TIS offers the following support to the Nuclear sector and others with services such as:

Full manufacturing capability for both stainless and carbon steels. A comprehensive welding knowledge covering over 20 years experience of both pipework and fabrications in the Nuclear sector.

Training of welders up to current Nuclear standards.

Full QA and support with Non destructive testing facilities in house, with qualified NDT testing personnel for Ultrasonic testing, X and Gamma radiography, MPI, CSWIP welding inspectors.

CNC machining, CNC pipe bending, full 3 d CAD, qualified welding procedures in both carbon and stainless steels fabrications to ASME and BS with manual semi automatic and orbital welding.

Experience/results, past clients

Past and present clients include: Sellafield Limited, ABB UK, Doosan Babcock Services, Doosan Babcock Nuclear services, National Nuclear Limited, AMEC, Vinci Construction, Baltec UK. TATA steel UK.

Manufacture of Carbon steel and stainless steel Venturis assemblies for ABB UK – ABB Japan- Chiyoda, Testing of top side and sub sea assemblies through ABB UK for international customers.

Manufacture of complete decommissioning skid and shielding equipment for B30 Sellafield limited.

Complete manufacture of Stainless steel CAGR lead lined flasks for Nuclear containment.

Manufacture of proto type marine well containment cap for Gulf of Mexico oil spill disaster through Baltec UK and Technip Oil and Gas USA.

Size reduction using high power, fibre-delivered, lasers, plus design and procedure development for remote sealing of high integrity waste containers

TWI Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
www.twi.co.uk

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Cambridge CB21 6AL

Phone:
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Fax:
+44 (0)1223 892588

Email:
twi@twi.co.uk

Name of distributor/agent in Japan:
T Fukuda/T Kakuhari /S Terada
UK Dodwell (TWI Japan)

Address:
City Advance 901, Kita-Ueno
1-12-4, Taitou-ku, Tokyo
110-0014, Japan

Phone:
+81 3 5826 7375

Fax:
+81 3 5826 7375

Email:
dodwell@d1.dion.ne.jp

Main products/services or technologies

By combining core expertise of welding engineering, advanced fabrication technology, asset management, structural integrity modeling and non-destructive examination TWI has built up a significant capability in the design of nuclear waste containers and the technology to enable remote closure and sealing (by welding) of a loaded containers.

Since the 1960's TWI has pioneered the use of lasers for cutting metals and has now proven the capability of this technology for use in nuclear decommissioning. Benefits offered by lasers compared to alternative techniques include:

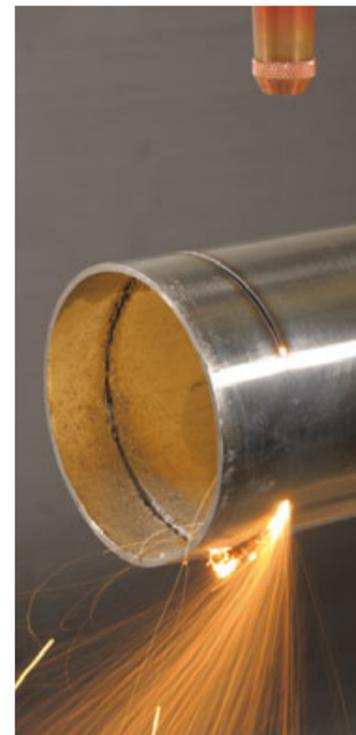
- Small lightweight process head
- No reaction forces
- Low fume generation
- Minimal secondary wastes
- Limited stand-off sensitivity
- Capable of cutting up to 70mm thick steel and also 100mm concrete
- Laser delivered via (up to 100m long) fibre optic cable so laser generator remains outside the nuclear environment.

Experience/results, past clients

TWI has worked with companies throughout the global nuclear industry including utilities, nuclear site operators, fuel cycle companies, regulators and engineering contractors, completing over 800 separate nuclear projects in a period of 35 years.

Decommissioning and waste management projects carried out with SKB, Nagra, Sellafield and the Nuclear Decommissioning Authority, Andra, US Yucca Mountain, RWMC, Japan.

In addition to its nuclear clients, TWI has also worked with Hitachi Ltd; Hitachi Zosen Corporation; IHI Corporation; Kawasaki Heavy Industries Ltd; Mitsubishi Heavy Industries; Toshiba; and Toyota Motor Corporation.



Centre for Nuclear Studies to support Government, Regulators and the Nuclear Industry in the UK and internationally

UCLAN | Nuclear



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
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 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

Website address:
http://www.uclan.ac.uk/
information/uclan/nuclear/
nucler/.php

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Central Lancashire, Preston,
PR1 2HE

Phone:
+44 1772 893324

Fax:
+44 1772 2915

Email:
lgwilliams1@uclan.ac.uk

Brief Organisation profile

UCLan has an engineering history that dates back to the early 1800s. It became a University in 1992. UCLan Nuclear is the university's centre for nuclear studies. Its Director is Professor Laurence Williams, F.R.Eng, (ex H.M. Chief Inspector, Office of Nuclear Regulation, HSE/NII). The centre has a unique mixture of academic and ex government and nuclear industry staff. Lecturers have extensive experience of working in the nuclear industry at senior levels including the Nuclear Decommissioning Authority, Office of Nuclear Regulation and BNFL. The centre has around 15 staff who support delivery of the nuclear undergraduate, postgraduate and CPD programmes. This group is further supported by other specialists who provide lectures on an ad hoc basis or as guest lecturers for specialist areas.

Main products/services or technologies

UCLan nuclear offers a wide range of nuclear related courses which cover decommissioning, radioactive waste, dealing with stakeholders, disposal of radioactive waste, nuclear leadership and management, professionalism in the nuclear industry, nuclear safety, security and safeguards, and regulations. The courses can be tailored to fit all levels of knowledge from degree to postgraduate including Continuing Professional Development. In particular we have worked with the industry to provide bespoke courses as required for particular clients or sectors.

Experience/results, past clients

UCLan is an experienced provider of nuclear education relating to decommissioning and radioactive waste management. UK students have come from ONR, Dounreay, EDF, Magnox, Atkins, Sellafield and Springfields, Horizon and the WNA. Internationally students have come from China, UAE (ENEC), Nigeria (NNRA), IAEA, Germany, and South Africa (Eskom).

UniTech provides direct sales of nuclear PPE, garment and, respirator, scaffold and tool decontamination services. Mobile units are also available

UniTech Services Group Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Address:
Unit 5 Oakwood Close,
Crumlin, UK, NP11 3HY

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+44(0) 1495240982

Email:
ghall@unitech.eu.com

Brief Organisation profile

UniTech Services Group has been providing critical decontamination services to the nuclear industry since 1976 and employs over 500 people in the UK, Western Europe and the US. A division of UniFirst Corporation a \$1Billion provider of uniforms and related services. UniTech has a focus of solving customer problems.

Main products/services or technologies

Nuclear and conventional laundry services including decontamination and service of respirators, nuclear protective garment design and manufacturing, the development of innovative radiological monitoring equipment.

Experience/results, past clients

Over 35 years specialists under contract nuclear decontamination and innovation serving over 80% of the NPP's in UK, US and Western Europe such as Magnox, EDF, Excelon, TVA, Energy Northwest, RWE, EON, Bruce Power, Candu, Songs, Westinghouse Electric to name a few.

URS is an international leader providing integrated engineering, construction, operational and technical services for public and private clients

URS



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Phone:
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Fax:
+44 (0)1925 854599

Email:
Robert.Bonner@urs.com

Brief Organisation profile

URS, through its acquired companies, has had a UK presence since 1924. Today we have 2,655 employees in the UK and a turnover of £253M. In the UK nuclear decommissioning and clean up sector, URS leads the organisations that are responsible for managing expenditure of more than £1.5billion for the British Government's Nuclear Decommissioning Authority.

Globally, URS operates in 50 countries, has a total annual turnover of about £5.6billion (\$9 billion) and has around 57,000 employees, of which around 20,000 are engaged in the nuclear decommissioning and clean up business.

Main products/services or technologies

URS is a fully integrated engineering, construction, programme management, nuclear decommissioning, waste management and technical services organisation with the capabilities to support every stage of the project life cycle—from inception and design through start-up and operation to decommissioning and closure. Our Global Management & Operations Services (GMOS) business provides programme management; planning, design and engineering; systems engineering and technical assistance; construction and construction management; operations and maintenance; environmental remediation; waste management and decommissioning, dismantling and closure services for public and private

clients, including the Nuclear Decommissioning Authority (NDA) in the UK and the US Department of Energy (Environmental Management, National Nuclear Security Administration, Office of Fossil Energy and the Office of Science).

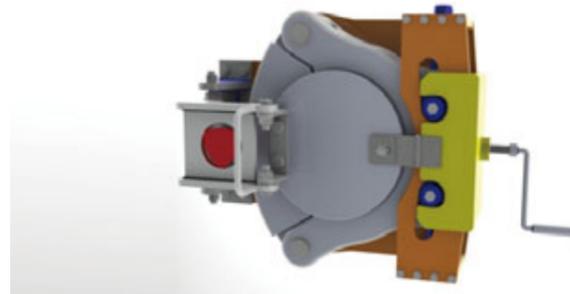
Experience/results, past clients

URS has been managing the operations and cleanup of high hazard, complex nuclear sites for three decades. Currently, URS is the lead organisation responsible for managing annual expenditure of over £3.4billion on projects in the UK and US. In the UK, we lead the management of the Sellafield Sites and the Low Level Waste Repository for the NDA, and we are a partner managing the Dounreay site. In the US, URS leads the Hanford River Corridor Cleanup, Hanford Tank Operations, Savannah River Site Liquid Waste, East Tennessee Technology Park, National Energy Technology Laboratory and the Waste Isolation Pilot Plant. URS is also a partner on five other DoE projects and provides technical support to five of the US National Laboratories.

Vector Technology Group is a major single source supplier of high integrity sealing solutions for the most demanding industrial applications

Vector Technology Group – Industrial and Power Division

VECTOR
technology group



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Phone:
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Fax:
+44 (0) 1639 822 623

Email:
Dr David Scott:
david.scott@vectortg.com

Name of distributor/agent in Japan:
We do not have a representative in Japan but are currently assessing a number of options

Brief Organisation profile

Vector Technology Group started business under the name of Steel Products Offshore in 1978. It changed its name to Vector International in 2003 following a merger with a UK company of that name, which itself was originally founded under the name of Techlok Limited in 1987. The name of the company was changed to Vector Technology Group in 2011.

The company has its main manufacturing sites in Port Talbot in the UK, and Drammen in Norway. There are also sales offices and manufacturing sites in Houston in the USA, and Kuala Lumpur in Malaysia, and sales offices in Rio de Janeiro in Brazil, and Perth in Australia.

The company has around 300 employees with sales revenue of 46 million euro in 2011 and forecast sales revenue of 75 million euro for 2012.

Main products/services or technologies

Vector Technology Group is a major single source supplier of high integrity sealing solutions. Products include SPO Compact Flanges, TECHLOK Clamp Connectors, FLANGELOK Compact Flanges and OPTIMA Subsea Connectors. Supplementary products include custom designed closure doors, access hatches, structural clamps and flanges. Core product features include:

- High integrity sealing and minimisation of weight and space
- Reduced installation time and maintenance costs

- Suitability for use at high and low temperatures and pressures

For the Nuclear Industry, our experience includes: supply of Techlok clamp connectors, Remote quick opening Powerlok connectors for decommissioning, and SPO Flanges to Nuclear facilities in Europe and the USA.

Other industries we supply to include: Oil and Gas (Onshore, Offshore, and Subsea); Power Generation; Renewable Energy; Mining; Chemical; Hyperbaric Test Facilities; Gas Storage and Containment.

All of Vector's connectors comply to ASME III and EN 13445, ASME VIII Div1, Div2, API and BS codes.

Key Vector engineering and sales staff have considerable experience of working in Japan in the engineering, energy, and environmental sectors.

Experience/results, past clients

Nuclear Industry: AECL (Canada), GE (USA), Halden Reactor (Norway), Premier Technology (USA), Ringhalls Nuclear Plant (Sweden)

Other Industries: Akzo Nobel, Amec, BP, Cameron, Chevron, Conoco Phillips, Daewoo, Dupont, Exxon, Formosa Heavy Industries, GE, Hyundai Heavy Industries, J Ray McDermott, KBR, MODEC, NASA, Nippon Steel Corporation, Petrobras, Petronas, Qatar Gas, Sabic, Samsung, Santos, Saudi Aramco, SembCorp, Shell, Statoil, Technip, Total, Wood Group, and Worley Parsons

Venn Engineering are specialists in integrating nuclear waste & decommissioning projects, providing both Technical, Project Management and Project Controls services

Venn Engineering Services Ltd



>>>Products and Services

- **Decommissioning**
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- **Waste management**
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- **Site restoration**
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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+44 (0)1453 821440

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Brief Organisation profile

Venn Engineering Services Ltd was incorporated in 2006 by former Magnox Electric employees with the objective of creating a front-end engineering consultancy capable of contracting to the worldwide nuclear energy sector. Venn employs circa 40 staff; our predicted turnover for 2012/13 is £3.3m with forecast growth of 20% /annum for the next 3 years.

Venn are experts in nuclear decommissioning and nuclear waste management and our consultants have extensive collective nuclear industry experience. This high level of expertise gives Venn the unique capability of not only being able to integrate effectively with our clients, but to enhance our client's capability to effectively execute their highly detailed and complex programmes of work.

Venn also provides a first class Project Controls and Project Management Services, delivering flexible, tailored, result driven Project Management.

Main products/services or technologies

Venn provide the following typical services:

Strategic Support

- Decommissioning Strategy and Planning
- Strategic Business Case Development
- Business Case Analytical Tools
- Programme/ Strategic Risk Management

Project Support

- Definition and Production of Project Strategies
- Project Sanctioning and Validation
- Independent Estimate Reviews
- Front-end Engineering Definition i.e. scope, schedule and cost
- Value Engineering to drive out excess cost

Technical Consulting

- Power Station Decommissioning Liability Estimation
- Independent Review / Verification
- Lessons Learned facilitation
- Technical Optioneering and Analytical Tool Development
- Decontamination Technology Assessments
- POCO Strategy Development
- Integrated Waste Management Strategy Development
- Reactor Dismantling Optioneering
- Environmental Impact Assessments
- Waste Accountancy / Estimation
- Waste Disposal in line with a waste hierarchy
- Waste Packaging, Treatment and Transportation Analysis

Regulatory Support

- Regulatory submissions
- Safety Case Assessments
- Waste Disposal Acceptance Criteria Evaluation
- ALARP Assessments
- BAT (BPEO/BPM) Assessments and Workshops

Experience/results, past clients

Venn's experienced workforce successfully deliver work to the following key clients;

- Japan Atomic Power Company (Tokai 1 Decommissioning planning)
- Nuclear Decommissioning Authority (NDA)
- British Energy/EDF
- Energy Solutions
- Magnox Ltd
- Areva
- VT Nuclear Services
- EBRD
- Interserve Ltd
- Sogin
- Venn staff work on transitioning reactor sites; moving from operations into defuelling and decommissioning phases.
- Venn's personnel have developed reactor decommissioning plans for plant in Italy, Spain & USA including PWR, BWR & Magnox designs.

Engineering with Integrity

Westlakes Engineering provide unrivalled specialist expertise and technical services to the nuclear industry, including design, decommissioning and waste management

Westlakes Engineering



>>>Products and Services

- Decommissioning
 - ▶ Post-operational clean-out (POCO)
 - ▶ Decontamination
 - ▶ Dismantling
 - ▶ De-energising & demolition
- Waste management
 - ▶ Waste processing, conditioning & passivation
 - ▶ Waste storage & transport
 - ▶ Waste disposal (licensing / repository)
- Site restoration
 - ▶ Site radiological assessment & material sorting
 - ▶ Environmental remediation (land / groundwater)
 - ▶ Post clean-up release surveys

>>>Company Information

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Andy.hooper@westlakes.co.uk

Brief Organisation profile

Westlakes Engineering are an award winning UK based SME established in 2004, with over 35 highly skilled and experienced personnel, and with access to many more specialist consultants and partners.

We are one of the UK's top ten Civil Structural & Architectural Consultants within the Nuclear Sector, providing specialist support for the decommissioning of many high profile nuclear assets.

We have a proven track record of delivering a quality product, in line with Client requirements, to budget and programme. We make a concerted effort to accelerate and innovate, with an emphasis on the delivery of right first time solutions.

Fundamental to our approach are trust, honesty, openness and a collaborative approach to problem solving, and we collaborate with all of the major consultants and contractors who currently service the UK and global nuclear industry.

Main products/services or technologies

We are fully conversant with the nuclear design and decommissioning processes and procedures, and have successfully delivered designs & decommissioning solutions that have been subjected to intense scrutiny from the Regulators.

Our specific nuclear skills include:

- Optioneering & Value Engineering studies
- New Build – substructure, superstructure and infrastructure.
- Structural Assessments of existing and degrading structures
- Care & Maintenance – Asset inspections and assessment of existing structures
- Design for decommissioning – we utilise lessons learned from previous decommissioning in new designs, to facilitate future decommissioning and potential re-use of the structure.
- Decommissioning – Design and Assessment, from option development to temporary works

design, including fault and accidental loading, seismic and impact analysis and assessment.

- Dismantling & Demolition – Assessments and method statements with regard to structural stability, containment and safe removal.
- Demolition - Assessment of structures and advice on civil/ structural related aspects of demolition
- Independent Technical Approvals & Peer Reviews
- Storage & Disposal – Design and assessment for waste management, storage and disposal facilities.

Experience/results, past clients

We have proven experience of delivering decommissioning and waste management projects. Our personnel are highly skilled, valued and trusted by our nuclear industry clients. We have extensive experience of delivering complex multi-disciplinary contracts for national and international Consultants and Clients including:

- Sellafield Limited Nuclear Licensed Site
- LLWR at Drigg Nuclear Licensed Site
- Magnox Limited
- Dounreay Nuclear Licensed Site
- Springfields Nuclear Licensed Site
- British Energy
- Radioactive Waste Management Directorate (formally UK Nirex)
- FANR (Federal Authority for Nuclear Regulation – Abu Dhabi)
- Amec
- Babcock
- Doosan Power Systems
- Westinghouse



Products and Services

Company (page number)	Decommissioning				Waste management			Site restoration		
	Post-operational clean-out (POCO)	Decontamination	Dismantling	De-energising & demolition	Waste processing, conditioning & passivation	Waste storage & transport	Waste disposal (licensing / repository)	Site radiological assessment & material sorting	Environmental remediation (land / groundwater)	Post clean-up release surveys
AMEC plc 14	●	●	●	●		●	●	●	●	●
Applied Seismology Consultants Ltd 15							●	●		
AREVA-ATKINS Partnership UK 16	●	●	●		●	●	●	●	●	●
Article 13 17	●	●	●	●	●	●	●	●	●	●
Arvia Technology Ltd 18	●				●		●		●	
Avon Protection 19	●					●		●		
Babcock International Group 20	●	●	●	●	●	●	●	●	●	●
BHR Group 21	●	●	●	●	●	●				
Brokk UK Ltd 22	●	●	●	●	●					●
C W Fletcher 23					●	●	●			
Carillion plc 24	●		●	●		●			●	
Centronic Ltd 25	●	●	●	●	●	●	●	●		
CSE-Controls Limited 26	●	●	●		●	●		●		
DBD Limited 27	●				●	●	●	●	●	
Eden Nuclear and Environment Limited 28						●	●	●	●	
FLOWERVE FLOW CONTROL UK 29					●					
Forth Engineering Cumbria (LTD) 30		●			●			●	●	
Galson Sciences Ltd 31			●		●	●	●	●	●	●
HESCO Bastion Ltd *1 32	●					●			●	
HR Wallingford 33							●	●	●	
Industrial Technology Systems Ltd (ITS) 34	●	●			●	●	●	●	●	
Informed Solutions 35		●						●	●	●
James Fisher Nuclear Ltd 36	●	●	●	●	●	●	●	●	●	●
JGC Engineering & Technical Services Ltd 37	●	●	●	●	●	●	●	●	●	●
KDC Contractors Limited 38	●	●	●	●	●	●	●	●	●	●
Land and Marine Project Engineering Limited 39	●	●	●							
Lloyd's Register / Scandpower 40							●			
Logical Personnel Solutions Limited 41	●	●	●	●	●	●	●	●	●	●
Matom Ltd 42	●	●	●		●			●	●	●
MCM International 43		●			●	●	●	●	●	●
Mirion Technologies (IST) Ltd 44	●	●	●		●	●	●	●		
Mon Maintenance Services Ltd (MMS) 45			●	●	●	●				
Morson Projects Limited 46	●	●	●		●	●		●		
National Nuclear Laboratory 47		●			●			●	●	
National Physical Laboratory 48	●				●			●		
NATIONAL SKILLS ACADEMY NUCLEAR 49	●	●	●	●	●	●	●	●	●	●
NIS Limited 50	●	●	●	●	●	●	●	●		
Nprojx Ltd 51	●	●	●	●	●	●	●	●	●	●
NUCLEAR DECOMMISSIONING SERVICES LTD (NDSL) 52	●	●	●	●	●	●	●	●		
Nuclear Engineering Services Limited (NES) 53		●			●	●				
Nuclear Technologies (A Division of TUV SUD (UK) Limited) 54	●	●				●	●	●	●	
Nuclear Technology Education Consortium 55		●			●	●	●	●	●	●
OC Robotics 56	●	●	●	●					●	
Ove Arup & Partners Hong Kong Ltd 57					●	●	●		●	
Provelio Nuclear Limited *2 58										
Pursuit Dynamics PLC (PDX) 59	●	●			●				●	
Raddec International Ltd 60								●		
Radwise Limited 61	●	●	●		●			●	●	●
REACT Engineering Ltd 62	●	●	●	●	●			●	●	●
Respirex International Limited 63	●	●	●	●	●	●	●	●		
Risktec Solutions Limited 64		●				●	●		●	
Savant Limited *3 65	●	●	●	●	●	●	●			●
Shadow Robot Company Ltd 66	●	●	●							
Sound Mathematics Ltd *4 67										
Structure Vision Ltd 68			●		●	●	●			
Tata Steel Projects 69	●					●	●			
The Technology Partnership plc 70	●	●	●		●	●		●	●	
TIS Cumbria Limited 71	●	●	●							
TWI Ltd 72		●	●			●	●			
UCLAN Nuclear 73	●	●	●	●	●	●	●	●	●	●
UniTech Services Group Ltd 74	●	●	●					●		
URS 75	●	●	●	●	●	●	●	●	●	●
Vector Technology Group - Industrial and Power Division 76	●	●			●					
Venn Engineering Services Ltd 77	●	●	●	●	●	●	●	●	●	
Westlakes Engineering 78	●		●			●	●		●	

HELPING YOUR BUSINESS GROW INTERNATIONALLY

Solutions for Business

Funded by
UK Government

A range of UK Government support is available from a portfolio of initiatives called Solutions for Business (SfB). The “solutions” are available to qualifying businesses, and cover everything from investment and grants through to specialist advice, collaborations and partnerships.

UK Trade & Investment is the Government Department that helps UK-based companies succeed in the global economy, and is responsible for the delivery of the SfB product “Helping Your Business Grow Internationally”.

We also help overseas companies bring their high-quality investment to the UK’s dynamic economy – acknowledged as Europe’s best place from which to succeed in global business.

UK Trade & Investment offers expertise and contacts through its extensive network of specialists in the UK, and in British embassies and other diplomatic offices around the world. We provide companies with the tools they require to be competitive on the world stage.

For further information please visit www.ukti.gov.uk or telephone +44 (0)20 7215 5000.

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Published January 2013 by UK Trade & Investment
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