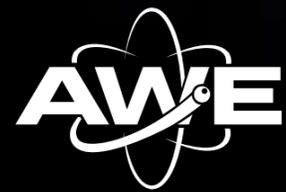


AWE Annual Report 2007/8

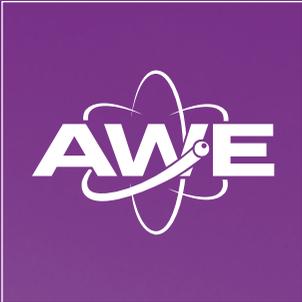


The Atomic Weapons Establishment is managed and operated by AWE plc

AWE Aldermaston • Reading • Berkshire • RG7 4PR

For further information about AWE, contact AWE Corporate Communications 0118 981 4111
or visit our website www.awe.co.uk

Making it Happen



Happen

About AWE	2
Overview of the year	4
Deliver	8
Verify	12
Facilitate	18
Assure	22
Support	28
Perform	34
Care	38

- AWE operates on two major sites in Berkshire
- Aldermaston (750 acres) is the company headquarters where design, research and manufacturing takes place
- At Burghfield (225 acres) the company carries out final assembly and maintenance of warheads as well as decommissioning
- We employ around 4,600 people
- A further 2,000 work for long-term contractors on our sites
- AWE contributes nearly £360 million to the local economy each year

For more information and our latest news, visit our website at www.awe.co.uk

About AWE

The Atomic Weapons Establishment (AWE) makes and maintains warheads for the UK's nuclear deterrent. It has done so for more than 50 years, serving the country safely and securely.

AWE also plays a vital role in support of the Comprehensive Test Ban Treaty and counter terrorism.

Today the country's sole nuclear weapon system is Trident – a submarine-launched ballistic missile. The current nuclear warhead design is expected to last into the 2020s, and no Government decisions on any refurbishment or replacement have yet been taken.

AWE plc has a 25-year contract, running from 2000, to operate AWE on behalf of the Ministry of Defence (MoD). The company is owned by a private consortium, AWE Management Ltd, made up of three equal partners, British Nuclear Group, Lockheed Martin and Serco. The Secretary of State for Defence holds a 'special share' in AWE plc.



Overview 2007

Welcome to the 2007/8 AWE Annual Report which we have called ‘Making it Happen’ – a phrase which captures our mindset as a business committed to the successful delivery of the programme to our customer .

The past year has been important for AWE. In March 2007 Parliament endorsed the Government’s Defence White Paper on ‘The Future of the United Kingdom’s Nuclear Deterrent’. This stated clearly that the Government has “decided to take the steps necessary to sustain a credible deterrent capability in the 2020s and beyond.”

AWE is moving into the future with new confidence, secure in the knowledge that we are required to support the Trident system and – if required by the Government – any successor system, well into this century.

We have agreed a clear programme of work with our customer, the Ministry of Defence (MoD). So now it's down to us to deliver – it's about 'making it happen'.

Last year I reported on progress made following the announcement in 2005 of a programme of investment in the buildings, facilities and employees at AWE to ensure that we are in a strong position to support Trident throughout its intended in-service life.

I am pleased to say that the pace of progress has been maintained. The profile of the AWE sites is

steadily changing with a number of transformational construction projects forging ahead. At the west end of the Aldermaston site the distinctive building which will house the Orion laser is nearing completion.

Nearby the twin accommodation buildings, known as Gemini, are also rapidly taking shape. This complex, built to very high environmental standards, will house more than 1,400 AWE staff when it is completed in 2009. The new accommodation is eagerly anticipated and a lot of work has been going on to ensure a seamless transition for staff into what will be a very different working environment.

The AWE Burghfield site also remains an important part of AWE's operations and a significant programme of development is underway there.

The future of AWE will depend on the quality of our people and I am pleased to report that our recruitment continues to go well. This gave us an employee total of around 4,600 by the end of the year. Additionally we continue to work with a range of suppliers and around 2,000 long-term contractors also work across our sites.

We also launched a new sponsorship scheme during the year to address undergraduates, MSc and PhD students to help us create our own resource to address scarce skills issues.

With such a big influx of new colleagues, appropriate training and integration into the organisation is essential. To help us manage this significant transition we have developed a Programme Management Academy within AWE.

This level of commitment to training is essential for us to meet the demanding and dynamic challenges we now face to deliver complex projects in taxing timescales.

We continue to have a thriving apprenticeship scheme with another 50 trainees joining the scheme in August 2007. I am proud to report that AWE has again won a major national award for the scheme. We were named Employer of the Year for the south-east region by the Learning and Skills Council.

Another invisible but significant change this year was the launch of an updated set of values for AWE. Values are only effective if they mean something, and I believe our re-invigorated values – One Team, Purpose and Achievement, Innovation and Creativity – really do capture what AWE is about today.



The distinctive building which will house the Orion laser is nearing completion

One achievement which truly symbolised our values in action was the success of the AWE team which took on the best of British industry to win the 2007 Microsoft Challenge event. The team went on to secure a credible fifth place in the World Team Challenge in December.

It is always good to see AWE gaining external recognition on an individual as well as on a team level. So it was wonderful to celebrate the achievement of AWE Distinguished Scientist Brian Thomas who was awarded the prestigious Edward Teller Medal by the American Nuclear Society.

Not only do we make history at AWE, we also celebrate it. In 2007 we marked 50 years since the most important nuclear tests ever undertaken by the UK took place in the South Pacific.

The Grapple trials, without which AWE as it is today probably wouldn't exist, involved the development and testing of nine nuclear weapons. The trials led to the '58 Agreement' between the UK and the US – the cornerstone of our current collaboration.

To mark the 50th anniversary of the trials, I was delighted to welcome back more than 50 Grapple veterans – many now in their eighties – for a special visit to AWE.

While protecting national security, we like to be as open as possible about our work at AWE. In June we hosted a visit for national and local media which gave us an opportunity to show and explain some of the science we undertake. The media party toured the Aldermaston site and visited both the HELEN laser and its successor Orion which is under construction.

As you look through the pages of this report you will find a very positive story of progress achieved, of determination to maintain improvement and, above all, of a team of people who are 'Making it Happen' at AWE.

Don Cook, Managing Director of AWE

Dr Brian Bowsher, with Orion in the background during the media day in June 2007



Deliver

Delivering the programme requirements of the Ministry of Defence while ensuring the safe operation of our facilities remains the prime focus at AWE.

The context

Parliamentary support during 2007 for the Government's decision to retain the UK's nuclear deterrent for the foreseeable future has underpinned the role AWE plays in support of national defence.

That means that our job is to maintain the Trident warhead stockpile for as long as is necessary along with the capability to develop a replacement warhead if required. The Government has stated that decisions on whether the Trident warhead should be refurbished or replaced are likely to be needed during the next Parliament.

Annual assessment

The annual assessment of Stockpile Health is the mechanism by which AWE provides annual assurance of the condition of the

in-service Trident warhead stockpile to the MoD.

The latest annual cycle was completed in June 2007 and its outcome underpinned current AWE manufacturing plans. As usual, a series of review, learn and improve activities have been conducted which will lead to further improvements in future.

Technical Outreach

As part of our Technical Outreach programme, AWE staff collaborate with universities to research key elements of our activities. For example, we continue to work closely with Cranfield University to deliver a jointly developed MSc in Systems Engineering for Defence with a specific module on nuclear warhead engineering for AWE and MoD staff.



One of the four Vanguard class submarines which carry Trident missiles

International collaboration

AWE scientists continue to maintain close links with their US counterparts through collaborative groups in accordance with the 1958 Mutual Defence Agreement. These groups enable two way exchanges in technology, explosives and radioactive safety, environmental matters, security, research and manufacturing practices to ensure we achieve best practice.

New directorate

During 2007 a new Directorate of System Engineering (DSE) was formed.

The new directorate, led by Dr Brian Bowsher, will work with the rest of the company to ensure the most effective delivery of

the corporate programme. One of the directorate's key roles will be to look at managing interaction both with UK industry and international partners.

DSE will work to optimise the life of Trident, maintain capability and support the challenges of Nuclear Security. It will co-ordinate AWE technical decision making, and technical interactions with industry and our international partners.

Chemical technology

During the past year our Chemical Technology Division has taken responsibility for non-destructive testing, dosimetry and radiological instrumentation in addition to materials development, non-metallic production, chemical analysis, environmental monitoring and radiochemistry.

One major achievement has been the accreditation of AWE's Environmental Monitoring Laboratory by the United Kingdom Accreditation Service (UKAS).

Newly refurbished chemical analysis laboratories are now fully operational, allowing an old facility to be vacated. A surface finishing facility has also been successfully commissioned.

A major project started during the year to improve the non-metallic production facilities at AWE Burghfield. This will enable the closure of a large number of older facilities and will improve working conditions for staff.

Project CONNECT

Project CONNECT was established to reduce time and cost in the design to

manufacture and assembly process and will therefore involve many aspects of AWE's technical work.

The approach used is a combination of Lean Six Sigma process improvement coupled with the more widespread adoption of 3D model-based techniques, associated data management and product information management systems.

Disposal and recycling

A strong focus during the past year has been on finding disposal routes for unwanted materials. This has been achieved through materials being recycled for reuse either directly at AWE or by outside industry and has delivered welcome environmental benefits. Examples include:

- The disposal of offsite holdings of depleted uranium swarf from the discontinued operations in our former Cardiff plant. These holdings have now been sent for recycling into containers for medical isotopes and as a catalyst for use in the petrochemical industry.
- Almost half a tonne of beryllium swarf accumulated over many years has been repackaged. This will be sent for recovery as beryllium copper alloy for use in the electronics industry as high purity X-ray windows for security scanners.
- Encouraging work has been carried out to enable recovery of depleted uranium arisings, reducing the quantity of new material purchases with consequent financial and environmental savings.

Environmental monitoring at AWE Aldermaston



EMCOR's electric cars and vans are helping lower carbon emissions at AWE

Verify

In the Comprehensive Test Ban Treaty era, AWE must rely on its leading edge capability in science and technology to verify the effectiveness of the deterrent.

Orion

The building which will house Orion, one of the world's most powerful laser research facilities, is now a distinctive feature at the west end of AWE's Aldermaston site. With the building soon to be completed, installation of the laser components will begin in 2008.

Orion's primary purpose is to support the underwriting of the safety and reliability of the UK nuclear deterrent. It will also provide a unique laser capability for use by other stakeholders, including the UK academic community, across a broad range of scientific study including advanced ignition schemes for inertial fusion research, astrophysics and fundamental physics in the high energy density regime.

In the Orion target chamber, laser light will be focussed onto a microscopic target which is compressed to many times normal density and then heated to five million degrees by absorption of the laser energy.

Scheduled for completion in 2010, Orion will eventually replace the HELEN laser which continues to support the work of AWE's plasma physics community. In support of AWE programmes, the HELEN facility fired over 600 target 'shots' during 2007 – a record over the lifetime of the facility which is now 28 years old.

The HELEN laser was also successfully used to generate temperatures exceeding 500eV and near solid density using its short pulse beamline. Generation of these conditions demonstrates that higher temperatures and densities will be possible using Orion in the future.

Construction work continues inside the Orion laser hall



Conferences

More than 120 delegates, including leading figures from industry and academia attended the inaugural AWE hosted Dynamic Compression of Condensed Matter meeting held at The Royal Society in December 2007.

This prestigious two-day event discussed shock and high-pressure physics phenomena in the 21st century, focussing on experimentation, application and development of hydrodynamics capability. The forum fostered in-depth knowledge exchange, discussion and debate in key areas of physics research in the UK. It was seen as a springboard for collaborative working and strengthening international relations within the broader UK community.

The 7th Tritium Users Group conference was hosted by AWE in May 2007. This group provides a forum for the exchange of information on topics of common interest to the UK tritium community. The group facilitates the exchange of information, ideas and views on all aspects of tritium processing, storage, waste assessment, waste disposal, health physics and safety assessments.

The meeting in May was the largest to date with over 50 attendees from 15 UK-based organisations with an interest in tritium.

AWE sponsored the Institute of Computation and Fluid Dynamics Conference in March 2007 with a number of AWE design physicists giving presentations on numerical methods,

simulation, turbulent flow and modelling. Delegates included eminent academic experts from across the world working in the field of fluid dynamics research and application.

Outreach

Links to industry and academia are important to AWE and are the focus of our technical outreach activity. AWE currently has technical contracts with around 30 universities in the UK, including Heriot-Watt University, Cranfield University, Cambridge University and London's Imperial College.

During 2007 AWE became a corporate member of the Royal United Services Institute (RUSI), the leading professional forum in the UK for those concerned with national and international defence and security.

Systems Integration Capability Facility

AWE's capability to meet its programme requirements has been further enhanced with the opening of a Systems Integration Capability Facility. Opened in July, the facility will form the basis of AWE's systems integration capability in warhead engineering. The laboratory was delivered within budget and ahead of schedule.

Early career scientists

A tour of the Pentagon formed part of the US leg of an international exchange programme for early career scientists from both sides of the Atlantic during 2007.

It was the first time AWE employees had been involved in the

American side of the UK/US Exchange of Early Career Scientists (EXECS) Programme.

The scheme is designed to help groups of early career scientists gain an increased understanding of UK and US defence research and development, while making contacts and generating opportunities for longer term interactions.

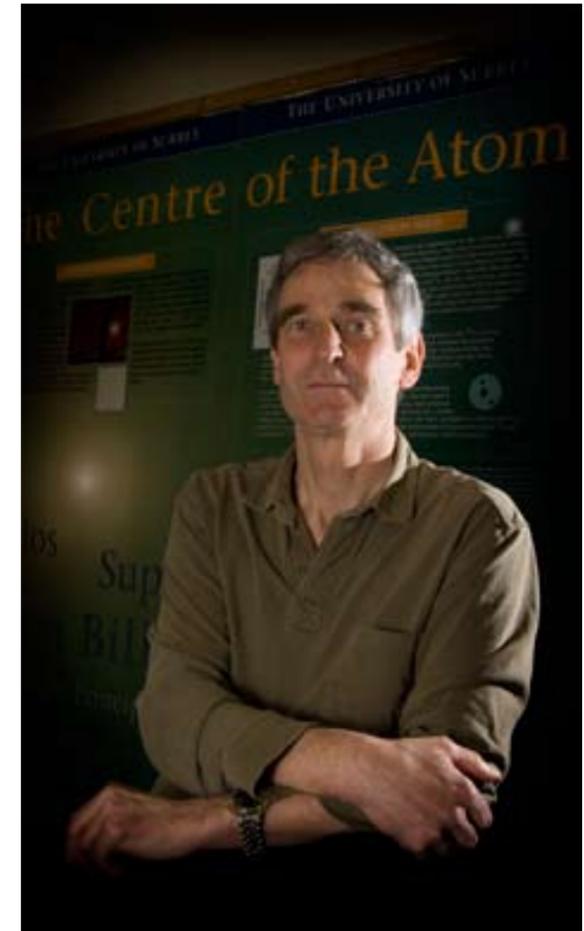
A group of scientists spent two weeks on each side of the Atlantic visiting each others' research establishments, attending talks, viewing facilities and meeting scientists.

IOP Award

The Institute of Physics (IOP) presented its award for Best Practice in Professional Development to AWE at an annual awards dinner.

The London event was attended by physicists from across AWE, along with representatives from academia and industry, and the MoD. The award recognised successful and innovative ideas in the professional development of physics staff. It was won jointly with British Energy plc.

The IOP's Professional Standards Committee commended the AWE creation of role of the head of profession for physics, the Company's support for the William Penney fellows and chairs in academia, and the AWE system for recognising and promoting leadership and technical talent.



Dr Philip Walker, one of our William Penney fellows



The exchange visits between the US and UK were a great success



Teller Award

Dr Brian Thomas, a Distinguished Scientist in AWE's Plasma Physics Division, was presented with the prestigious Edward Teller Award by the American Nuclear Society.

He joins the ranks of winners such as the inventor of laser fusion, John Nuckolls of the Lawrence Livermore Laboratory in the USA, and Nobel prizewinner Nicolay Basov of the Lebedev Institute in Moscow, who worked on the invention of the laser.

The award – established in 1991 – is presented by the Society every two years for 'pioneering research and leadership in the use of laser and ion-particle beams to produce unique high-temperature and high-density matter for scientific research and for controlled nuclear fusion'. Brian – who was awarded an OBE for contributions to defence science in 2001 – received the accolade at the 2007 International Conference on Inertial Fusion Science and Applications (IFSA). The conference, held in Japan, was attended by more than 500 delegates from 52 countries.



Teller Award winner Dr Brian Thomas

The Orion laser under construction at AWE Aldermaston

Facilitate

AWE is engaged in a major programme of redevelopment across its sites as we replace ageing facilities and work to create the right working environment to support the business in the future.

Sites development

Work is progressing well on a variety of major projects which will replace outdated facilities and improve others required to support AWE's mission.

Orion project

AWE's contract with the MoD for the construction of a replacement high powered laser facility, known as the Orion Project, is progressing as programmed and all of our planned milestones have been met.

The construction of the building began during the summer of 2006 and is scheduled to be complete in the spring of 2008. The majority of the orders for the laser components have been placed. Installation and commissioning of the laser components will commence later this year

and the facility remains on schedule for completion by the end of 2010.

Gemini

Having received planning consent in January 2007, the new twin building office complex – known as Gemini – is under construction. When complete in 2009 it will house around 1,400 staff.

A further two modular accommodation buildings were completed during the year, bringing the total number on the Aldermaston site to five.

Planning applications

Plans for a new small-scale manufacturing facility to be built at AWE Burghfield were approved by West Berkshire Council in December 2007.

Gemini ... the new office complex under construction at AWE Aldermaston



The new facility will enable AWE to consolidate into a single facility a number of older facilities at both Aldermaston and Burghfield which manufacture small-scale components such as polyurethane foam blocks, small ceramic components, potting and adhesive materials. The single-storey facility will have a total floor area of 1,465 square metres.

AWE submitted a planning application for a replacement High Explosives Fabrication Facility (HEFF) at the Company's Aldermaston site. This was approved by West Berkshire Council in February 2008.

As part of AWE's continuing programme of site improvement and modernisation, the proposed development will allow the replacement

of a number of existing operations currently undertaken in separate buildings to be located within a single new plant at Aldermaston.

The main processes involve the shaping and manipulation of explosives material. Limited storage would be provided within the facility, but the manufacture of explosive material itself would not be carried out there.

The development will comprise two buildings to be located at the eastern end of the AWE Aldermaston site. It will not be visible to the public from the site boundary.

Burghfield

A new dog kennel complex was completed at the site and will be handed over to the Ministry of Defence Police. Work on the

replacement of Burghfield's perimeter fence also began during the year, and has now been completed.

Travel and transport

The roll out of AWE's travel and transport plans has continued in line with the Company's sustainability strategy. The on-site bus service has improved and 500 bicycles are provided for staff to use across the sites.

To improve traffic flow, work has begun on the construction of roundabouts at the Aldermaston and Tadley gates of the Aldermaston site. Other improvements including cycle paths and a further roundabout at the site's main gate will follow. As an interim safety measure, a no-right-turn policy was introduced at these gates.

Two petrol/electric hybrid cars were added to the Company's car pool and, following a successful trial, our facilities services partner Emcor has acquired a further eight eco-friendly vehicles for use on the AWE sites.

Civilian security support

While the guarding of AWE sites is undertaken by the MoD police, civilian security officers have since 2003 carried out tasks such as checking personal and vehicle passes and undertaking vehicle searches.

In November 2007, following a competitive tender process, the civilian security service contract for AWE sites transferred to MITIE.



500 bicycles have been provided for staff use on AWE sites



AWE regularly tests our response teams with emergency scenarios

Exercises

Emergency exercises are a requirement of our nuclear site licenses and are essential to provide training to staff and test the robustness of our systems. In 2007 both the Aldermaston and Burghfield site exercises provided challenging scenarios for our emergency response teams to work in partnership with the Royal Berkshire Fire and Ambulance Trusts.

In November AWE's response to an emergency with off-site consequences was put to the test at a Level 2 'ALDEX' exercise.

Together with representatives of the MoD, AWE staff took part in the important tri-annual exercise which simulates the response to the unlikely event of an emergency posing a potential risk to the public.

The event, overseen by industry regulators, involved bodies including Thames Valley Police, West Berkshire Council, Royal Berkshire Fire and Rescue

Service, the Environment Agency and local primary care trusts.

Feedback from the assessors confirmed that the exercise satisfied the requirements for effective public protection in the unlikely event of a nuclear accident at AWE.

Facilities management

AWE Facilities Operations Manager Tracey Guyatt was named as one of the top 20 most influential women in the facilities management profession. She was recognised as part of a campaign by the publication FM World to identify women who have made an impact in the development of the industry.

Tracey, who joined AWE in 1993, is responsible for nearly 350 buildings, with 2,000 occupants and a team of 30.

Assure

Assurance is AWE's shorthand for the management of health, safety, environment, quality and security. Our Assurance Directorate monitors and interprets national and international policy to ensure the Company meets current and future requirements.

By managing these business critical activities AWE plc carries out its responsibilities to the highest standards and embraces latest thinking to make innovative and progressive changes in the way we approach and carry out our work.

Our site licensing conditions ensure the Company takes a proactive role with those we work alongside. We have clear lines of communication with our regulators, both local and national, and with the communities around our sites. We also actively share best practice and learning around our business and with our industry peers.

Target Zero

In 2007 the key activity that contributed to our outstanding health and safety performance was the 'Target Zero' programme.

Now in its second year, the key objective of this programme is to develop and improve the health and safety culture within AWE and to work towards incident and injury free sites.

The success of the programme is based on improving the control of health and safety through co-operative effort at all levels in the Company.

Target Zero provides a practical framework that drives leadership, management and individual behaviours. It means having responsibilities clearly defined and accepted, whether this is in specifying contracts, designing safe systems, supervising work or undertaking work. The emphasis is on effective planning, communication and teamwork, to ensure risks are identified and managed.

Environmental improvements

A core responsibility for AWE is to assess and control the Company's environmental impacts while addressing the historic environmental legacies built up over many years of operations. We are undergoing a period of development vital to ensure that we succeed in our mission. This involves the demolition of redundant buildings, refurbishment of existing buildings and the construction of new facilities.

The key objectives of AWE's environmental policy are to:

- introduce sustainable development into all our processes and activities
- prevent or minimise discharges wherever practicable
- reduce the consumption of resources (material, fuel and energy)
- minimise waste through a commitment to recovery and recycling where feasible
- ensure that the amount of waste produced and accumulated on AWE sites is kept as low as reasonably practicable. This means all waste produced as a result of AWE's activities is appropriately contained, controlled, classified, recorded, and transferred to the appropriate waste handling, storage or disposal facility, as soon as is reasonably practicable
- minimise the holdings and use of hazardous materials, including radioactive materials and explosives
- pro-actively manage the ecology and heritage of our sites.

External recognition

The Royal Society for the Prevention of Accidents (RoSPA) awarded AWE a major award for a seventh successive year of health and safety improvements. This is a great credit to everyone at AWE and its partners.

In addition, we maintained external accreditation and recognition from Lloyd's Register Quality Assurance (LRQA) of our management systems to the internationally recognised standard, ISO 9001:2000.

In 2007 the Company successfully underwent a recertification audit by the LRQA, which said there had been significant improvements in environmental management over the previous 12 months, with several facilities demonstrating best practice.

Our regulatory self-measurement programme is regarded by both the Nuclear Installations Inspectorate (NII) and the Environment Agency as an example of best practice. New and revised Radioactive Substances Act 1993 (RSA93) authorisations for Aldermaston and Burghfield were issued to the Company in March 2007.

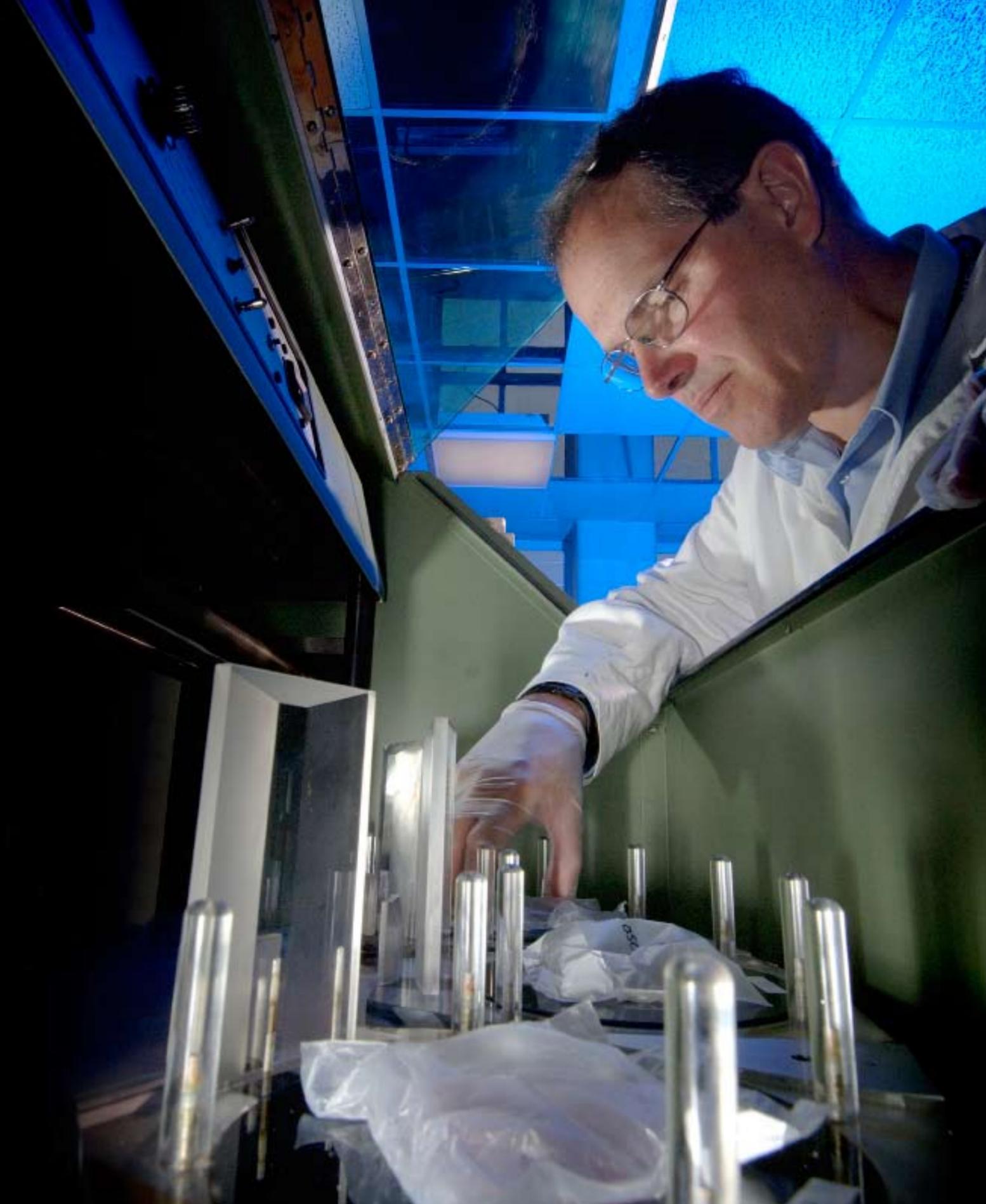
These activities provide a valuable source of training for all involved as, in addition to providing 24 hour cover for our sites, our fire and ambulance crews also provide a back-up response to the Berkshire Fire and Ambulance crews. Annual on-site exercises help strengthen further the close links between the organisations.

Looking forward

A major investment programme to replace or refurbish AWE's facilities has made a visible difference on our sites. We are working to develop and acquire the specialist skills we need to effectively control construction environments, sharing our practical knowledge and learning with our industrial partners both at a national and international level.



Regular tests of the water supply are carried out



Left: Dosimetry checks carried out at AWE.

Above: Recycling and reusing materials where we can at AWE

Measuring Our Performance

Like other UK companies, AWE has a legal obligation to meet regulatory requirements in all areas of assurance performance. As a nuclear operator we are subject to intensive review of our performance by a number of independent bodies. During last year we again met all these requirements by a significant margin and continued to deliver improvements in a number of key areas.

In addition to these regulatory limits we have developed a number of challenging company performance targets. We use these self-imposed targets to maintain world-class performance, measure our progress and support continuous improvement. Some of them are designed specifically as a management tool and are only relevant to AWE staff. Others cover key assurance issues such as our environmental performance and the health and safety of our workforce.

We report our data in line with the Company “contract year” – the period from April 2007 to end March 2008 is Contract Year 8 (CY8). To meet publication deadlines for this report, some targets show the projected outcome for the contract year. However, AWE also publishes much of this information on our website www.awe.co.uk. Importantly, many safety related targets have been reduced to zero in accordance with our Target Zero approach.

Individual radiation exposure

Radiation doses are measured in units called milliSieverts (mSv). The limit set by the Ionising Radiations Regulations (1999) for maximum annual exposure of an individual is 20mSv.

We continue to minimise the individual dose received by our staff. In CY8 we have maintained a challenging target and our projected highest individual dose is not expected to exceed 3.4mSv.

Collective radiation exposure

We measure the dose received collectively by all our radiation workers to show we are managing the total dose within the Company. For Contract Year 8 we set ourselves a target of 175 man mSv. Performance at the end of December 2007 was 124.6mSv.

Environmental discharges

The Environment Agency is the body that issues authorisation limits for all nuclear sites. The limits for all AWE radioactive discharges, either in liquid form or to air, are set well below any level that could pose any hazard to the public or the environment. Contract Year 7 saw AWE consult widely on new authorisation limits for our Radioactive Discharge Authorisations, and new lower limits have been agreed with the Environment Agency and our key stakeholders. Improvements in technologies and practices have enabled these lower limits, and further reflect excellent co-operation between staff and regulators to continually improve our processes and technologies to allow these formal reductions to be sought. In addition to our statutory limits we set our own challenging targets for discharges of radioactive liquid and gaseous wastes, according to our planned programmes for each year.

The unit used to measure of radioactivity is the Becquerel (Bq). One Becquerel is the equivalent of one atom disintegrating every second. There are 30 million million million atoms in a litre of water, it can be seen that the Becquerel is a very small unit to measure. For this reason we use larger units – the MegaBecquerel (MBq), which is one million Becquerels, the GigaBecquerel (GBq), which is 1,000 million Becquerels and the TeraBecquerel (TBq), which is one million million Becquerels to describe our discharges.

Waste liquid discharges

Up to the end of December 2007 we had discharged 2.63MBq of Alpha radiation against our target of 5MBq. For liquid Beta discharges the figure until the end of December was 8.55 MBq, against our target of 15MBq. Discharges to water of Tritium, an isotope of Hydrogen, follow a similar pattern. At the end of December we had discharged 0.608 GBq, against a limit for the year of 3GBq. These are all well within the levels set for us by the Environment Agency.

Waste discharges (atmospheric)

Our targets for discharges of gaseous wastes to the environment, including alpha, beta and tritium, are based on planned programmes of work. Our predicted gaseous emissions for CY8 are:

- 0.04MBq for alpha, against a target of 0.07MBq.
- 0.06MBq for beta, against a target of 0.15MBq.
- 0.50TBq for tritium, against a target of 2TBq.

All gaseous emissions are well within targets.

Waste recycling

Controlled waste is one of three types of solid waste – the others being radioactive and explosive. Controlled waste includes office, construction, demolition and hazardous waste, which AWE has traditionally sent to landfill. With increasing costs and pressures on landfill space, we recognise that this is the least preferred option and, consequently, in 2007 we produced our first Integrated Waste Strategy (IWS). This sets out the Company’s intentions to provide a consistent framework for the sustainable management of all waste streams and directly supports our Key Sustainability Theme 2: Waste Management.

The IWS ensures that the Company continues to drive improvement and exceed the requirements of legislation. This is done by creating a culture where it is second nature to minimise the production of waste and maximise the re-use, recycling and energy recovery of any waste whose production cannot be avoided.

The IWS identifies six objectives that are being implemented through a series of commitments to:

- improve AWE employee/contractor ownership of their waste management duty
- improve communication and provide easily accessible technical support and advice
- improve processes for sustainable waste management
- improve strategic planning for future waste management
- minimise waste production and increase segregation, re-use, recycling and recovery and
- manage residual waste in a sustainable way (e.g. limit disposal to landfill).

At an operational level, reuse and recycling routes are provided for items such as batteries, cans, cardboard, electrical and electronic equipment, fluorescent light tubes, furniture, glass, paper, plasterboard, plastic, printer and toner cartridges, scrap metal, tyres and wood. A colourful, easy-to-read Guide to Recycling has been made available to everyone working on AWE sites.

In 2007 AWE recycled:

- 1204 tonnes of scrap metal (670 tonnes in 2006)
- 82 tonnes of waste electrical and electronic equipment (WEEE) (49 tonnes in 2006)
- 3175 printer and toner cartridges (6549 in 2006)
- 11 tonnes of glass (8 tonnes in 2006)
- 1 tonne of cans (1 tonne in 2006)
- 143 tonnes of paper (118 tonnes in 2006)
- 76 tonnes of card (72 tonnes in 2006) and
- 3 tonnes of plastic cups (3 tonnes in 2006).

Lost time accidents

We report any injury that means an employee cannot perform their normal duties for more than three days to the Health and Safety Executive as a Lost Time Accident (LTA). We use this information to measure our performance against other industries and to chart our own progress.

We have set our targets for lost time accidents at zero. This is an aspirational target which reflects our belief and desire that, as no one should be injured as a result of their work, there is no other acceptable target.

- the LTA rate for staff to the end of December 2007 was 0.05 LTAs for 100,000 hours worked.
- the LTA rate for contractors to December 2007 was just over the rate for the previous year.

Support

With a significant recruitment programme in hand, AWE rightly puts a lot of effort into making sure that our people have the support and development opportunities they require.

People matter

The success of AWE is entirely down to the quality and commitment of the people who work on our sites. We are acutely aware of this fact and place a high priority on recruiting, retaining, developing and motivating our staff.

AWE is a growing 'family' with a workforce made up of direct employees as well as those who are employed by our long-term partners and suppliers.

Recruitment

Effective recruitment is a major area of focus for the Company to ensure AWE has the skills needed to support its programme. To attract the best people in a highly competitive market, we deploy an innovative approach to recruitment using mainstream and specialist media to alert people to opportunities.

By the end of 2007 our overall employee headcount rose to more than 4,600, up 200 since March 2006. We have also continued to refine our orientation process to ensure that recruits settle in as quickly and effectively as possible.

Apprentices

Over 50 years of successfully producing and retaining "home grown" talent has established AWE's Apprentice Training Academy firmly into the category of "Best in Class".

Even so, it is good to see external confirmation that our pride in the Apprentice Training Academy is justified – in 2007 we were again named as Best Large Employer of apprentices in Berkshire by the Learning and Skills Council.

AWE apprentice in the workshop



Materials Science is one of the areas where our graduate scientists can develop their skills



AWE continually assesses core skills and competency requirements. In September a project to expand the facilities which house the Apprentice Academy was completed and this will help accommodate the growth in the number of skilled people required by the business in the future.

AWE currently employs 127 apprentices, making our scheme one of the largest of its type in the UK. There were more than 300 applicants last year, underlining the high reputation of the scheme. The vast majority of those applying will have heard about the scheme through the activities AWE undertakes with schools in the surrounding area.

Graduates

AWE continues to recruit high calibre graduates across a range of disciplines to support company requirements for ongoing capability.

One of the challenges we face is to raise the profile of AWE on university campuses, and particularly within the departments most appropriate to meet our needs.

During the past year we have reviewed the AWE graduate concept. Work was undertaken to refresh its image and improve the amount of information available to the graduate audiences. This included advertising, brochures and other publicity material, along with stands at recruitment fairs.

Key to the suite of information available to our graduate audience was the introduction of a brochure targeted at the post-graduate audience for the first time as a supplement to the new generic graduate brochure. This was well received and, in their Recruitment Marketing Awards 2007, the Chartered Institute for Personnel and Development recognised it with their highly coveted literature award.

Employee development

Support for new and existing employees is at the heart of our Employee Development Strategy.

While AWE is able to offer employees a wide variety of roles, there are a number of core competencies which everyone needs to have. During 2007 core and people management competencies were introduced into the business.

AWE's competency framework divides into three main areas: Core Employee Competencies, People Management Competencies and Technical Competencies.

Values

Like any other business, change is very much part of life at AWE. It is important that our Company values keep pace and, with this in mind, the Executive Board led a review during the year. Our refreshed values are One Team, Purpose and Achievement, Innovation and Creativity. These are backed by a clear set of action statements.



Stephen White with the Chartered Institute for Personnel and Development literature award

The right people

It is important to know AWE has the right people and capabilities to deliver the programme required by the MoD. A contractual performance measure has been agreed – known as the People Measure.

The objectives driving the measure are:

- plan, manage and develop the right skills and capabilities to meet AWE’s business needs
- establish an environment where people feel involved and engaged
- opportunity and incentive to strive towards exceptional performance.

Talent management

The Company recognises that, to meet the future needs of the organisation, the development of internal talent is vital.

Greater emphasis has been placed on the early identification, subsequent development and deployment of the potential of our staff.

Reward

A company-wide programme rewards special effort or contribution in meeting and exceeding business objectives. It applies to all employees and contractors.

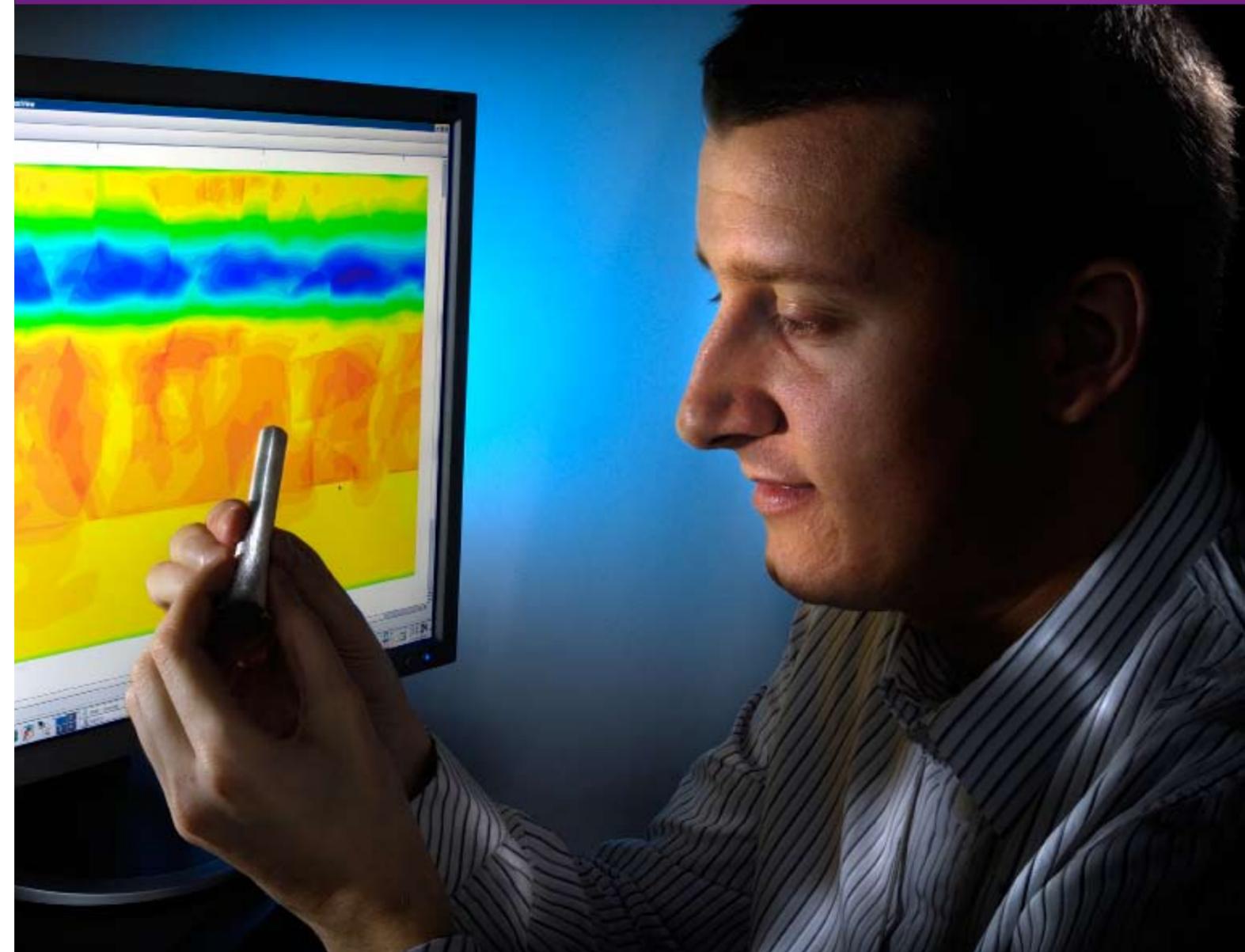
More than 600 employees and guests gathered to celebrate success in the 2007 Gold, Silver and Bronze Awards.

The Individual Gold Award winner was Dr Simon Case, Scientist in Design Physics. Simon won the employees’ vote for work on the completion of a world’s first technical capability; on the dynamic behaviour of materials, and subsequent journal paper.

The Team Gold Award winners were a cross-directorate team comprising more than 100 employees involved in AWE’s response to the Litvinenko case. The team donated their cash prize to charity.

Employee opinion survey

AWE values the feedback of its employees. A full employee opinion survey is run every two years, and a more narrow ‘pulse’ survey is carried out in the interim. The results are used to create both corporate and directorate action plans.



Individual Gold Award winner Dr Simon Case

Perform

A new business system and enhanced reporting were among the features contributing to the Company's progress in the eighth year of its contract to operate AWE on behalf of the Ministry of Defence.

Sound planning

Major change characterised a challenging and exciting year for AWE's business management and finance team.

The introduction of a new integrated business system in April heralded a new era in corporate reporting, workflow and data capture. Meanwhile, evidence of AWE's infrastructure programme is increasingly visible around our sites, as the fruits of our planning become a reality.

We are in our eighth contract year since our parent company, AWE Management Limited, was awarded the contract to operate AWE on behalf of the MoD. As AWE plc continues to grow and plan for the future, sound business management is vital to our continuing success.

Measuring performance

Since the start of its contract in 2000, AWE plc has operated in a partnering arrangement with the MoD. The contract fee is earned through a well-established incentivised regime based on challenging measures of performance.

This regime incorporates a challenging suite of fee-earning deliverables that assure the customer that AWE is meeting its obligations. These deliverables are representative of the total scope of the Company activities, focusing on scientific, technical and business performance.



Delegates on a Lean Six Sigma training course



One of the many training sessions at AWE

For the MoD accounting year ending 31 March 2007, the Company achieved 94.8 per cent – a score well into the “excellent” performance score band.

AWE continued to perform at a high level to the end of 2007, delivering the vast majority of the incentive milestones and requirements to time and scope.

Business predictability

Business continuity management has made significant advances during the period with the appointment of full time directorate risk and business continuity managers. Staff training is now carried out to a standard approved by the Business Continuity Institute, and includes Executive level exercises.

The corporate risk register has been rationalised and a new risk register has been created to manage top level technical risks. New AWE/MoD partnering arrangements for a joint risk management process have been agreed.

Good progress has been made since the formation of a Programme Management Academy which is now firmly established with a thriving Community of Practice. Training and introduction courses on Lean Six Sigma have been run under the auspices of the Academy, and a number of green and black belt practitioners have been accredited.

Working on Oracle – part of Project Unite



Project Unite

During 2007 AWE implemented one of the largest integrated Oracle business systems in Europe. The business is now working hard to embed the new system and help us achieve the full potential of a fully integrated business management system.

Supply chain processes

AWE has an excellent record of achieving cost-effective procurement, ensuring that we receive value for money from our purchases as well as meeting the technical requirements of the internal customer.

The main focus during 2007 has been on process re-engineering and improvements to optimise benefit from the new business system. This has allowed the AWE procurement team to push forward with the introduction of cross-company improvements to the 'procure to pay' process as well as enabling the introduction of other improvement initiatives.

The procurement team has been instrumental in co-ordinating the Company's approach to account management and category management. These are seen as fundamental tools in ensuring that AWE optimises the performance of its supply chain across all areas.

Oracle-captured procurement information will enable the procurement team to improve leverage of supply chain across materials, services and engineering commodity sectors – providing value for money solutions to the delivery teams. Additionally Oracle is providing the data to facilitate a comprehensive review of AWE's low-value transactional purchasing with a view to improving effectiveness and freeing buyers to add more value.

The procurement team has continued to provide major effort and commitment to lead process improvement initiatives in all procurement dealings with internal and external stakeholders.

Business development

The majority of commercial work undertaken during 2007 has been in the area of National Security, with support being given to the Home Office, the Intelligence Services and the newly formed MoD Counter Terrorism, Science and Technology Centre. In addition to successfully renewing existing requirements, AWE has received new work in these areas.

Other major business development activities during 2007, include a detailed review and analysis of the intellectual property portfolio, with a view to possible exploitation in the future. All intellectual property created at AWE is owned by the Secretary of State for Defence.

Business development saw a gradual reduction during 2007. This can be attributed to the corresponding growth in the core programme activities resulting in less resource and facility availability for commercial related work.

Financial results

The Company's focus on effective management helped us to deliver a sound financial performance during 2007. Turnover for AWE plc for the year was £762.1 million. Of this figure £10.3 million represented commercial work.

AWE spent more than £500 million during 2007 in the procurement of materials and services. Over £244 million of this spend was contracted with task-based sub-contractors.

Care

AWE is committed to taking responsibility for the impact of our business activities in environmental, social and economic terms.

AWE continues to play an important part in the lives of the local community. In addition to the planned development of the infrastructure around our sites, the Company contributed more than £386 million to the local economy during 2007. Around 47 per cent of this input consisted of wages to staff in the local and surrounding areas, with local businesses receiving the remaining 53 per cent by way of payment for materials and services.

Sustainability

AWE takes an integrated view of the management of environmental performance with economic and social impacts to ensure that we meet our corporate social responsibility goals.

In accordance with the UK Government's 2005 Sustainability Strategy, we have taken on board the following visionary goals:

- living within environmental limits
- ensuring a strong, healthy and just society
- achieving a sustainable economy
- promoting good governance
- using sound science responsibly.

A Corporate Sustainability Committee has been set up and is chaired by AWE's Director of Infrastructure, Andrew Jupp. Its role is to support AWE's Executive Board by providing strategic leadership, direction and oversight, as well as setting policy on corporate sustainability and responsibility.

Making recycling easy at AWE



Travel plan

Following the launch of a travel plan in 2006, the Company has continued its work to minimise AWE's impact on local transport infrastructure. Initiatives included the extension of off-site cycle lanes, the provision of 500 bicycles, and an internal bus service to cut the number of vehicle journeys required around and between our sites.

Our integrated waste, energy and biodiversity strategies are interwoven into the day-to-day business operation and cumulatively help to demonstrate AWE's commitment to corporate social responsibility.

Waste strategy

During 2007 AWE produced an Integrated Waste Strategy. This sets out the Company's intention for sustainable management of radioactive and non-radioactive wastes in line with the waste hierarchy of: eliminate at source; reduce and reuse; recycle and recover; disposal.

Low Level Waste (LLW) is disposed to the National LLW Repository near Drigg in Cumbria. Intermediate Level Waste (ILW) is stored on site awaiting the UK Government's commissioning of the National Repository for ILW. AWE does not produce High Level Waste. The UK Government is at present consulting widely on the national long-term solution for LLW and ILW.

Cutting water leakage

The Company is engaged in a programme of water main refurbishment aimed at reducing leakage on our sites by more than 60 per cent over a 10 year period.

AWE has 120 kilometres of water and wastewater mains on its sites, most of which are at least 50 years old. AWE has put in place a long-term partnership with

United Utilities, a national multi-utility company, to operate the water distribution system and to implement a refurbishment programme.

Substantial progress has been made and the five year target of reducing leakage to 33 per cent of total distribution input has already been met.

Ecology and biodiversity

AWE has established a biodiversity strategy with associated action plans. One project changed its fence line to avoid ancient oak trees. Another appointed specialists to manually relocate valuable insects and beetles to a suitable alternative location on site.

With the guidance of ecologists, the Company has proposed mitigation for the loss of bird nest and bat roost sites due to project activity.

The proposed installation of specially designed boxes in and around our sites became part of one project's planning application.

Guidance from English Nature was adopted when the wall surrounding the North Ponds complex – part of AWE Aldermaston's surface water management system – was repaired. In 2007 the ponds saw the highest population of Great Crested Newts yet recorded.

Energy management

During the past year AWE's Energy Management Team has been working to deliver against the principles set out in the Company's Energy Strategy.

Measurable reductions in carbon dioxide emissions have been achieved by the Company. This has been the result of the introduction of gas into our back-up boiler house at Aldermaston along with the closure of both the main boiler house and significant lengths of redundant steam main. By the end of 2007 savings in direct emissions of carbon dioxide, reported through the European Union Emission Trading Scheme, were around 7,000 tonnes.

Demand for electricity at our Burghfield and Blacknest sites is partly met by purchasing electricity generated from combined heat and power sources.

Working with schools

The AWE Schools Liaison Scheme aims to develop relationships between AWE and 90 local schools to enhance scientific and engineering awareness.

Schools within the scheme include primary schools, secondary schools and sixth form colleges within a catchment area roughly bounded by Reading, Newbury and Basingstoke. Schools liaison representatives are drawn from AWE staff, mostly with existing links to the schools as parents, governors or parent teacher association members.

AWE runs three schools challenge events: the Chain Reaction challenge for pupils in the final year of primary schools; an engineering challenge event for pupils in Year 10, and a sixth-form science and engineering challenge. All of the events are run by teams of AWE graduates.

In October the magic of science was brought to life for 11 children from Trevelyan Middle School Windsor, who attended AWE's school science fair. Young AWE scientists organised the Secrets of Materials event as part of the Company's AWESome Science Campaign which aims to foster interest in science among pupils.

AWE has also provided support to the Ufton Court Educational Trust to allow a traditional Elizabethan herb garden to be restored to its former glory. The garden will be made accessible for disabled people and will provide a number of volunteering opportunities for local groups.



Students at the AWE Schools Engineering Challenge event

Ufton Court, just a few miles from AWE's sites in Berkshire, supports and promotes active learning for more than 4,000 children and young people each year by making available its history and the natural environment.

Mentoring

AWE's graduate mentoring scheme, first set up three years ago, now has 70 recruits working across 10 schools in Reading, Newbury, Tadley and Basingstoke.

They offer practical and technical advice to GCSE students who might be thinking about pursuing

the sciences, engineering or technology. They also offer guidance on interview techniques and polishing up a curriculum vitae.

Bringing charities and business together

AWE has sponsored the appointment of a new, part-time role to coordinate an Employee Volunteering Network for the Basingstoke area. The role is designed to bring charities that have a need in the local area together with local companies who want to make a difference.

Each year AWE supports a local and national charity of the year. In 2007 this was Age Concern Tadley and the Down's Syndrome Association and AWE staff raised almost £15,000 which was divided between the charities.

Informing the local community

We believe we have a responsibility to keep our neighbours informed about developments at AWE. One of the ways in which we do this is through our recently updated website: [www. awe.co.uk](http://www.awe.co.uk).

We also produce and distribute a community newsletter called *Connect* which is delivered to 22,000 homes.

The latest issue included articles on the Orion laser projects, on our successful apprentice academy and on the charity work carried out by employees.

LLC 50th meeting

AWE's Local Liaison Committee (LLC) celebrated its 50th meeting in September. The committee, which brings together representatives of local councils with AWE's senior management, held its first meeting back in October 1993.

The LLC gives AWE an opportunity to report back on its progress to around 40 local authorities in Berkshire and Hampshire and to answer any questions they have about our activities.

AWE supports local schools throughout the year



Making **it**

© Crown Copyright 2008

This document is of United Kingdom origin and contains proprietary information which is the property of the Secretary of State for Defence.

It is furnished in confidence and may not be copied, used or disclosed in whole or in part without prior written consent of the Directorate of Intellectual Property Rights (DIPR), Defence Equipment and Support, Poplar 2A#2218, Abbey Wood, Bristol, BS34 8JH, England.

Produced by AWE Corporate Communications

Designed by AWE Media Group

Printed by Corporate Document Solutions Ltd.