Devonport Royal Dockyard Limited

HEALTH, SAFETY & ENVIRONMENT REPORT 2007

CONTENTS

iNTRODUCTION & SUMMARY

Devonport Royal Dockyard Limited (DRDL) was acquired by Babcock International Group PLC in June 2007 becoming part of its Babcock Marine division. This Health, Safety and Environment report for 2007 addresses the range of health, safety and environment issues related to both Devonport Royal Dockyard's nuclear and non-nuclear activities and gives background information about the company's policies and organisation.

Good health and safety management is not only a key requirement for a responsible employer but fundamental to business success. Babcock has fully endorsed the company's formal Health & Safety, Nuclear and Radiological Safety, Environmental and Quality Policies, which were reviewed and where appropriate updated during 2007.

Overall DRDL's safety performance during 2007 was excellent. The company's reportable accident frequency rate was 0.43 per 100,000 man-hours worked. This was 20% better than the company's previous best performance. The company also recorded fewer lost time accidents (73) in 2007 than in any previous year.

The annual collective dose for work within radiological areas for 2007 was similar to that for 2006. No individual exceeded the DRDL self-imposed annual limits of 15mSv for Classified Persons and 4mSv for Written Arrangement Persons. Doses will continue to be minimised for all work associated with ionising radiation in accordance with the ALARP (As Low AS Resonably Practical) principle.

Throughout 2007 DRDL operated within all of the limits of its radioactive waste disposal Authorisation, which was granted by the Environment Agency (EA) in March 2002. Results from DRDL's 2007 environmental radioactivity monitoring survey show that the dose to the most exposed members of the public as a result of DRDL's discharges was assessed to be no greater then 0.003mSv, which is over 800 times less than the UK average background radiation dose of 2.7mSv per year.

DRDL successfully demonstrated the adequacy of its emergency arrangements, by exercise, to its regulators, the Nuclear Installations Inspectorate and the Defence Nuclear Safety Regulator in June 2007. DRDL also participated in Short Sermon 07, the Ministry of Defence's annual demonstration of its emergency arrangements and Plymouth City Council's 3-yearly test of its off-site plan.

Lloyd's Register Quality Assurance completed two successful assessments of DRDL's Business Management System during 2007 ensuring the company's continued registration to the International Quality Standard ISO9001:2000.

During 2007, a new Safety Culture Improvement programme initiated re-alignment of the various safety meetings and forums within the company with full involvement of Trade Unions as well as the introduction of Time Out For Safety (TOFS) meetings across the major DRDL Operational Business Units where every employee has the opportunity to discuss Health, Safety and Environmental issues that affect them with a trained Team Leader for 30 minutes every week.

CONVENTIONAL HEALTH & SAFETY

ROLES AND RESPONSIBILITY

In June 2007 Devonport Royal Dockyard Limited (DRDL) was acquired by Babcock International Group PLC and became part of its Babcock Marine division. The operational structure of Babcock Marine is based on five separate business units; Submarines, Warships, Naval Bases, Defence Systems and Equipment Solutions . There are also two support directorates; Corporate Services and Human Resources & Communications.

DRDL's organisation and management structure is based on a number of key principles contained within its Health and Safety Policy.

These include:

- that those responsible for managing or carrying out tasks and operations are also responsible for the safety of those activities
- the provision of a source of safety advice independent of those responsible for managing operations and their associated safety aspects

These approaches are intended to enable clear responsibilities for safety to be implemented throughout all levels of the organisation.

National Interest Group

The 2006 report described the demise of the Health and Safety Executive National Interest Group on shipbuilding and ship-repair after almost 20 years. This was brought about partly by HSE reprioritising its resources and partly by a lack of commitment and involvement from the membership.

However, the NIG is now operational again and more effective than ever, with a reduced membership covering the main industry players of Babcock Marine (Devonport, Faslane and Rosyth), BAe Systems (Ships and Submarines), Fleet Support Limited at Portsmouth and the A&P Group.

The group meets quarterly, with each company taking a turn to host and chair the meetings. In addition to exchanging information on incidents, safety improvement initiatives and topics of mutual concern, the group hosts presentations from industry, the legal profession and the enforcing authority. This is a networking opportunity that the members extend to cover their everyday working lives – a safety incident on one site is quickly emailed to the rest of the membership and within a few hours over 17000 employees in the industry can be alerted to and take action on the issue.

REGULATORS & LEGISLATION

DRDL must ensure that its practices and procedures comply with an extensive range of legal and contractual requirements so as to ensure that the risks and impact on people and the environment are minimised.

Various directorates of the Health and Safety Executive (HSE) enforce conventional safety regulations on the DRDL site. The Field Operations Directorate (known in the past as the Factory Inspectorate) takes the lead role, but there is also input from the Diving Inspector and the Chemicals and Hazardous Industries Directorate which has a special interest in such issues as natural gas distribution systems on the site. Specialists within the Nuclear Installations Inspectorate look at fire certification of facilities associated with the Nuclear Licensed Site, whilst elsewhere fire safety matters are dealt with by the Home Office and Local Authority Fire Brigade.

DRDL is regulated by the Environment Agency and the Local Authority for waste arising from its non-nuclear operations. These are described in the Conventional Health and Safety, Environmental Protection section of this report.

New Legislation in 2007

The Health and Safety Executive publishes details of new and amended health and safety legislation. In line with the Government's attempt to ease burdens on business, such changes are restricted, if possible, to two common dates each year, 6 April and 1 October. The following changes were implemented in 2007:

- Work at Height (Amendment) Regulation 2007. These regulations have brought those paid to lead or train others in climbing or caving activities in the adventure sector within the scope of the Work at Height Regulations 2005. At Devonport all those working at height are trained and there are in excess of 100 trained rescuers who can initiate a rescue in the unlikely event of an incident.
- Construction (Design and Management) Regulations 2007. The revised CDM Regulations aim to improve the level of health and safety performance in the construction industry by clarifying the responsibilities of each duty holder and focusing on effective planning and risk management. DRDL has been working closely with the Ministry of Defence to ensure a joint approach and has produced a procedure and carried out training to ensure compliance.
- The Corporate Manslaughter and Corporate Homicide Act was passed in 2007 and came into force on 6 April 2008. The existing management arrangements identify responsibilities for all those working on the Devonport site.
- New chemical regulations, REACH, came into force in 2007 and a strategy is in hand, including staff training, to manage their impact on future business.

DRDL has started to look at the impact of forthcoming legislation relating to electromagnetic fields and optical radiation.

AUDITS

DRDL's Health & Safety Department has a dedicated safety auditor who conducts audits against the company's Health and Safety Manual on a monthly basis. Additional ad-hoc audits are carried out when a business need is identified.

Q-Pulse is the company database for programming audits and tracking non-conformities. Progress against non-conformities is reported on a regular basis.

In 2007 the main focus for conventional safety audits continued to be aimed at accident prevention and risk reduction. Project based audits were carried out on the routing of services in an effort to reduce the number of slip, trip and fall accidents and manual handling audits were carried out in high risk areas to help prevent muscular-skeletal-type injuries.

Another focus area was the control of contractors. This was aimed at reducing risk and ensuring compliance with procedures.

2007 also saw the continued use of joint audit teams with members representing for example, the health and safety department, parent projects and the Ministry of Defence.

CONVENTIONAL HEALTH & SAFETY

Business Management System Audits

In 2007, DRDL's Management Systems Compliance auditors continued to undertake audits across the company, supporting a number of key areas including operations at the Company's Appledore and Keynsham sites.

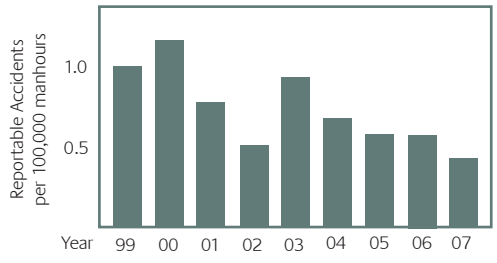
During 2007, departmental assessments were carried out across the company, assessing a wide range of activities within each department, ensuring compliance with DRDL's Business Management System and identifying areas of improvement to the business. The auditors also identified 22 processes within the company for review. These process audits cut across departments and sampled the process in many different areas across the company. Other audits included those specifically to monitor compliance with the ISO standard and other quality drivers. These activities will continue through 2008.

A number of auditors in the Company were trained in environmental auditing during 2007. This further strengthens the assurance of compliance with environmental standards.

Lloyds Register Quality Assurance completed two successful assessments of DRDL's Business Management System during 2007, which included a three yearly re-certification visit in March which resulted in maintenance of the company's registration to the International Quality Standard ISO9001: 2000.

REPORTABLE ACCIDENTS

Accident statistics are recorded and monitored as one of the measures of the company's health and safety management performance. They allow DRDL to identify trends in the type and causation of accidents so that appropriate action can be taken to prevent a reoccurrence.



DRDL continues to record accident rates approximately half that of its industry sector. The number of reportable accidents at DRDL in 2007 showed a significant decrease when compared to 2006. The reportable accident frequency rate for 2007 was 0.43 per 100,000 man-hours worked. This is 20% better than the company's previous best performance. The previous best was 0.54 achieved in 2002.

The company also recorded fewer lost time accidents (73) than in any previous year and in doing so beat its target by 10%.

As a result of these improvements the company lost less time to industrial injury (1240 days) than in any previous year with a reduction of over 30% on 2006.

Falls on the level, and employees striking against or being struck by objects were the main causes of accidents. Handling operations also continued to be the an area of concern during 2007. Work is continuing to reduce these particular types of accident during 2008.

DRDL reports specified accidents and incidents to the Health and Safety Executive in accordance with the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR).

Three classes of accident must be reported:

- fatalities
- specified major injuries e.g. major fractures, amputations, asphyxiation, electrocution and injuries resulting in hospitalisation for a significant period
- other injuries resulting in absence from work for more than three days

In 2007, there were no fatal accidents to DRDL employees, but there were 12 classified as "major" which had to be reported immediately to the HSE:

1. A cleaner climbing out from a bilge via a gap in the pipes slipped and fell hitting a pipe which resulted in a fractured rib and damaged muscle.
2. A cyclist suffered a fractured right shoulder when the wheel of his bike caught in train tracks, causing him to fall.
3. An employee whilst walking along a passageway stumbled and fell causing injury to his lower left leg. There was no sign of any obstruction, contamination or defect to the walkway that would have contributed to this incident.
4. An employee was positioning a magnetic base drill on a casting prior to use. As he let go of the drill (weight 27kg) it fell onto his right foot causing a fracture. He thought he had energised the magnetic base to hold the drill in place. He was wearing safety boots, but the drill hit his foot above the toe-cap.
5. A slinger fell 2.5m through a hatch that he had left open when accessing a gantry suffering bruising to his lower back, laceration below his right knee and a fracture to his right patella.
6. As an employee stepped down from a small scaffold platform to the main platform he slipped and stumbled. He put his right hand out to stop himself from falling and grabbed one of a nearby propulsor blade. His momentum caused his hand to slide down the blade resulting in a deep laceration.
7. A fabricator slipped on grinding dust and fell onto his outstretched left hand. He suffered a minor abrasion to his left leg. It was several weeks later, after suffering some discomfort to his left hand, that X-rays revealed he had recently sustained fractures to the hand.
8. A driver was getting out of a tow-master truck when he caught his head on part of the truck roof. He sustained an injury to his head which required an overnight period under observation at the local hospital.
9. A fabricator was cropping small pieces of steel on a guillotine when his fingers came into contact with the machine's plate clamps. He suffered an amputation to the tip of the middle finger and removal of flesh from the ring finger of his left hand.
10. Due to volume of traffice on part of the Dockyard site, a cyclist came close to the kerb causing him to fall from his bike and hit a wall. This resulted in two fractures to his left hand.
11. A fabricator was working with a colleague moving a steel plate, (weight 110kg) on a flat bench at hip level. Whilst manoeuvring the plate it fell through an opening in the bench and landed on his right foot, causing multiple fractures.
12. An employee was walking along a passage to the front of a ship when he tripped over safety wires and landed on his left arm/elbow resulting in a fracture.

In addition, there were 33 accidents resulting in more than 3 days absence from work, reportable to the Health and Safety Executive (HSE).

CONVENTIONAL HEALTH & SAFETY

Dangerous Occurrences

There were no RIDDOR reportable dangerous occurrences during 2007.

Objectives for 2008/09

As DRDL aligns itself with the Babcock International Group financial year reporting system its safety performance targets have been staged, with one set for the first quarter of 2008 and another for the following 12 months.

In the period January to March DRDL aims to maintain its performance from the previous year with a reportable accident frequency of 0.40 and no more than 12 lost time accidents. In the 2008/09 financial year a target has been set for continuous improvement in reportable accidents to a frequency of 0.30 with no more than 40 lost time accidents in that year.

These targets align with the objectives of DRDL which are to:

- in the short term, regain and maintain its position for the best safety performance in its industry sector
- in the medium term, improve its safety performance to a level consistent with the average for UK Nuclear Licensees
- in the long term, as a stretch target, compete on safety performance with the best of the Licensees

Whist pursuing these objectives through 2008/09, DRDL is committed to generating new and better performance measures to assess its control over fatal accident potential within its business.

TRAINING

Regular safety training is given to all DRDL employees to ensure that the company's standards for health and safety are well known and are consistent across the organisation. Courses range from mandatory fire safety training, which all employees must attend, through to specialist courses dealing with topics such as risk assessment and rescue & recovery from confined spaces. Safety training courses are held on each working day and can be arranged outside of normal working hours if required.

In 2007, over 5000 training contacts were made by the Health and Safety Department in over 550 courses.

The Institution of Occupational Safety and Health (IOSH) accredit a 5-day training course called "Managing Safely" aimed at providing practical support and increased understanding of key health and safety issues for production line managers. It also offers a nationally recognised entry level qualification in health and safety management. In 2007, a full programme of thirteen IOSH Managing Safely Courses was run involving 186 members of staff. The course was primarily aimed at line managers to develop their safety management knowledge and skills. Following the success of these courses the IOSH training will be extended across the site and other management groups in 2008.

Over 100 staff were provided training on COSHH and Chemical Handling and a noise training course prepared, to be introduced during 2008.

DRDL's main contractors were provided training on compliance with in-house arrangements for work with noise, hand-arm vibration and asbestos.

Safety support cover was extended to cover back-shift working to ensure that a source of safety advice and guidance was available during this period. It also afforded the opportunity to make safety training more readily available to shift workers.

OCCUPATIONAL HEALTH

The Occupational Health Department carries out several essential tasks in ensuring the health and well-being of the company's employees and meeting DRDL's statutory obligations. Plymouth Hospitals NHS Trust continues to provide a medical officer on a sessional basis. The relationship is working very well and the added security offered by the contract extension to 2009 will facilitate a closer working relationship between DRDL and Derriford Hospital leading to further development and improvement of the service.

Traditionally, Occupational Health has focussed on the prevention of ill health caused by work. Whilst this remains a paramount objective, the modern approach is to see the working environment as a promoter of general good health. This approach was advocated in a Government White Paper - Choosing Health; making healthier choices easier. The Company is committed to introducing the workplace elements of this paper. The following elements were introduced during 2007:

- adopting Vocational Rehabilitation - this is the first step towards developing a new approach to helping people back to work following injury, illness or impairment. This involves a multi-disciplinary approach working closely with the company welfare officer, Access to Work, HR, Employee and Manager.
- introduction of early referral to the physiotherapist for employees presenting with musculoskeletal disorders (when attending OHC or when we receive their first sick note). Adaptations to the work place and/or selected employment duties are made as required. Musculoskeletal disorders are now one of the commonest reported causes of work-related sickness absence.
- the use of temporary job modifications to help people back to work - even if they are not able to do their usual job. This can be of benefit both to employees, in terms of longer-term health, and to employers, who will not lose an experienced worker and face the costs of replacing them.

Health Promotion

Information leaflets and advice from OHC nurses covering a wide range of health promotion issues which encourage active living and healthy eating are available to all employees.

In 2007, the Company held four Smoking Cessation Clinics in conjunction with the NHS. There were a total of 32 attendees with 22 successfully managing to give up smoking. The Company covers the cost of the first 6 prescription charges for smoking cessation treatments.

Health Surveillance

Health surveillance has a vital role in ensuring that employees are fit to do their work and that their work is not prejudicing their health, for example:

- there are in excess of 500 DRDL Classified Radiation Workers all of whom require annual medical reviews
- to effectively manage exposure to noise, around 141 hearing tests were carried out during 2007 on those exposed, or potentially exposed, to noise at work
- health checks are also performed on former asbestos workers, lead workers, divers, drivers, and those exposed to respiratory sensitisers and to hand-arm vibration

CONVENTIONAL HEALTH & SAFETY

In 2007 the Occupational Hygienist conducted a number of work place visits to assess employees' exposure levels to hand-transmitted vibration working closely with the Occupational Health Physician and nurses.

In addition, workplace visits were conducted by nursing staff in order to improve health surveillance for employees working with metal working fluids.

RIDDOR Reports

The company reports specified diseases to the Health & Safety Executive, in accordance with the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR). Reports are required in the case of suspected disease, as well as confirmed disease. In 2007 there was one report under the RIDDOR regulations. This was as a result of a decompression illness, although the diver was only diving at a depth of 8.5metres.

Treatment Service

The Occupational Health Department provides a treatment service for those injured or taken ill at work. Prompt on-site first aid treatment can minimise the effect of injuries, reducing pain and suffering. When required, patients are sent to Derriford Hospital, either transported by the Westcountry Ambulance Service in the case of serious incidents or by taxi for minor injuries.

During 2007, a total of 2759 DRDL employees were seen as new cases, about 37% having been injured at work with the remainder either seeking treatment for illnesses or non-work related injuries. In addition, 399 contractor employees were seen, about 54% with work-related injuries.

Medical advice is given to staff travelling oversees. Vaccinations are now provided at the MASTA travel clinic in Plymouth.

Occupational Health in the Workplace

The Occupational Health Department undertakes regular workplace surveys either to investigate incidents or to look for features which may cause future health problems and then advise on how to eliminate these risks. For example staff from the Occupational Health Centre carried out over 150 Display Screen Equipment (DSE) assessments during 2007. The assessments ensure that a workstation is set up correctly and can result in the recommendation of the purchase of equipment such as wrist supports that assist in reducing the risk of future disorders.

Physiotherapy

The company's part time physiotherapy service continues to provide treatment for patients referred by the Company Medical Officer, their GP or Occupational Health nurses. This service has been increased to three and a half days per week. During 2007, over 960 treatments were carried out.

First Aid Training

The department organises training for company First Aiders, utilising an external training provider. During 2007 training in the use of Oxygen Resuscitators continued for those involved in specified confined space work, including purge gas welding and some painting operations.

Departmental staff receive the essential and necessary training to keep their skills up to date and meet the demanding requirements of professional governing bodies, such as the General Medical Council for continuing professional development.

HSE Approval

The Company Medical Officer is approved by the Health & Safety Executive for medical surveillance and examination of lead workers, divers and classified radiation workers and as a medical assessor under the Control of Vibration Regulations.

Drug & Alcohol Policy

The revised policy, introduced in 2005 has introduced an element of random testing for drugs, as well as the use of a breathalyser for alcohol testing.

Generally, the policy has worked well since its introduction. Everyone called for testing through the random selection process has given their full co-operation. A small number of employees have come forward voluntarily and are receiving help in addressing substance misuse issues.

OCCUPATIONAL HYGIENE

Occupational Hygiene is the profession dedicated to preventing work-related illness through the assessment and control of hazardous work environments. These assessments are often supported by measurement of such parameters as noise, vibration, heat, lighting and substances harmful to health.

Risk assessment

111 new or revised COSHH assessments were completed during 2007 in addition to 24 noise assessments and more than 20 other risk assessments under legislation controlling exposures to asbestos, vibration, lead and thermal environments. Measurements were made to support these assessments in many cases.

Noise and vibration

In 2007, an in-house noise-reduction team targeted quieter electric fans for installation onboard vessels, including an alternative to the air venturis typically used in reactor compartments on submarines. Further trials were carried out on the vibration emissions from burrs and discs fitted to grinding tools, and noise dosimetry measurements during hull fabrication at DRDL's Appledore site helped to determine exposure time and safe work arrangements.

Asbestos Management

In 2007, the Occupational Hygiene Department worked in conjunction with the Estates Department to introduce further procedures for asbestos management. Remedial work was prioritised and undertaken for those buildings and services identified from site surveys as presenting the greatest risk.

Other Initiatives

2007 saw many further initiatives involving Occupational Hygiene including:

- Latex-formed gloves were assessed and the main products withdrawn from use on the basis of risk.
- A new painting facility was introduced for RNLI lifeboats which significantly improved the control of exposure to isocyanate paints.

- Audits were carried out with our forklift truck provider to ensure the risk of whole-body vibration is minimised. This was subsequently introduced into driver training.

FIRE SAFETY

Fire Incidents

The Devonport site is protected by an active fire alarm and detection system that is supported by 230 separate fire alarm panels.

During 2007 the number of fire alarm incidents involving the attendance of the Local Authority Fire Service was 52 compared with a total of 80 for the previous year.

There were 5 minor fire incidents within the Company's areas of responsibility:

- A fire within an electrical relay unit which burned out prior to the arrival of the Fire Service.
- A fire on the scaffold staging of a submarine in dock which was extinguished by a fire sentry prior to the arrival of the Fire Service.
- A fire onboard the Steam Barge involving fuel soaked lagging around a generator exhaust outlet which was extinguished by an operator prior to the arrival of the Fire Service.
- A fire onboard a submarine involving hotwork. A small piece of lagging ignited and was extinguished by a fire sentry prior to the arrival of the Fire Service.
- A fire involving a pre-heating blanket which was extinguished by a fire sentry prior to arrival of the Fire Service.

Fire Safety Order

The Regulatory Reform (Fire Safety) Order was established in late 2006. The Order represented one of the most significant pieces of fire legislation change in recent decades. Aimed at reducing death, injury and damage caused by fire, it introduced a new proactive approach to managing risk from fire. As a result fire risk assessments have been carried out across all areas of the Company's responsibility. All projects and buildings classed as high or medium life risk have been assessed and action plans developed to reduce the risk of fire to as low as reasonably possible. Assessments continue to be carried out on the low life risk category.

Fire Liaison and Information Sharing

Liaison continued throughout 2007 with the various fire enforcing authorities including Devon & Somerset Fire & Rescue Service, Nuclear Installations Inspectorate (NII) Health and Safety Fire Inspectors and MOD Fire Inspectors. A close working relationship continues with Devon & Somerset Fire & Rescue Service, the Defence Fire and Rescue Service and the Nuclear Industries Fire Safety Co-ordinating Committee.

Enforcement Areas

The NII Health and Safety Inspectors enforce all fire safety matters within the Nuclear Licensed Site and onboard all ships and submarines under the care and responsibility of DRDL. Devon & Somerset Fire & Rescue Service enforce all other DRDL owned buildings. Those buildings leased or shared will be enforced by either Devon & Somerset or the Defence Fire & Rescue Service.

Objectives for 2008

1. To complete the update of all fire risk assessments, and maintain the review of all assessments under DRDL's area of responsibility. This includes the continued training and support of all building and ship fire controllers in the execution of their duties in line with the Regulatory Reform Order.
2. To continue to reduce the attendance of the Local Authority Fire Service to unwanted fire alarm actuations involving the activation of a single detector only. This will not only involve the development of procedures and training of personnel to investigate single detector actuations prior to calling the Fire Service but include a proposal to upgrade fire alarm panels and install multi-sensor detectors.
3. To continue to improve the Fire Service's knowledge and awareness of the risks within the Devonport site including its ability to deal with any potential fire incidents. This will continue to be achieved through increased operational risk visits to projects and buildings as well as fire training exercises.

ENVIRONMENTAL PROTECTION (Non Radiological)

Environmental management continues to be developed in line with the international standard ISO 14001. This enables the company to evaluate the environmental risks associated with its work in a structured way. This includes:

- Identification of relevant environmental legislation and 'good practice'.
- Development of strategies to implement the requirements identified.
- Review of work activities to ensure the environment is suitably protected and activities comply with the Company's Environmental Policy.
- Identification of suitable environmental objectives.
- Maintenance of all environmental licences, consents and permits.
- Liaison with the Environment Agency (EA).

New Developments

A new Permit was issued by the EA to cover any future work carried out with regard to the removal of existing TBT (Tri Butyl Tin) antifouling paint systems.

DRDL has not carried out any TBT application work for a number of years; nor expects to do so in the future. The purpose of the new Permit is to allow for controlled removal of existing paint from one or two existing RN vessels should the need arise.

Environmental Monitoring

DRDL holds three Permits issued under the Integrated Pollution Prevention and Control (IPPC) Regulations. Routine environmental monitoring of each of the processes concerned is carried out to ensure compliance with the respective Permit conditions. In 2007, DRDL continued to comply with all the targets set in these Permits. Details are given below – see 'Environment Agency Permits & Licences'

CONVENTIONAL HEALTH & SAFETY

Unplanned Events

There were three complaints on environmental matters received from the local community during 2007. Two involved noise from shotblasting activities. This was resolved by adjustment of working times. The other involved an intermittent diesel fume smell in the Keyham area of the city. This was eventually identified as arising from a particular class of vessel whilst on basin trials in RN hands.

There were 7 reported minor oil spillages on the Devonport site during 2007. All were successfully cleared up. There were no incidences of uncontrolled oil release reported during 2007 that could be identified as attributable to DRDL activity.

Environment Agency Permits & Licences

The IPPC Regulations specify the processes that are considered to be potentially the most polluting. Such processes require a Permit issued by the Environment Agency (EA) before they can be carried out.

DRDL operates three such processes:

- The combustion processes in the boilerhouses and steam-barge.
- The removal of TBTO containing paints.
- The surface preparation of metal items in cleaning bays.

Each Permit specifies material/chemical, releases which must be measured each year and declared to the EA.

The table below shows the releases of the most significant of these substances over the last 3 years.

Discharge	Amount Released		
	2005	2006	2007
Boilerhouses			
Oxides of nitrogen	33.04 tonnes	23.07 tonnes	15.75 tonnes
Oxides of sulphur	1.31 tonnes	7.38 tonnes	2.04 tonnes
Particulate matter	0.93 tonnes	0.224 tonnes	0.03 tonnes
TBT Plant			
Tri Butyl Tin Oxide (to Hamoaze)	0 kg	0 kg	0 kg
Painting			
Tri Butyl Tin Oxide (atmosphere)	0 kg	0 kg	0 kg

DRDL also holds 4 licences permitting the abstraction of water from the Hamoaze for use in fire mains, for cooling purposes etc.

During 2007:

- Maximum permitted abstraction volume was 8,690,424 cubic metres
- Actual volume of water abstracted was 3,490,752 cubic metres

All water abstracted is returned to the Hamoaze in an uncontaminated state.

Carbon Dioxide Releases

Under the EU Emissions Trading Scheme, DRDL has been issued with a Greenhouse Gas Permit for the release of carbon dioxide as a by-product of the boilerhouse combustion activities. In 2004, DRDL was required to calculate the amount of CO2 released in the years 2000, 2001, 2002 & 2003; these figures were used to calculate its permitted release allocation for subsequent years. This was set by DEFRA at 24,798 tonnes for phase 1 (2005 – 2008), thus requiring a reduction to emissions to meet the target. DRDL opted for a 3 year 'balancing cycle'; this means emissions had to be reduced to an average no greater than 24,798 tonnes per year for 2005, 2006 and 2007.

	2005	2006	2007
Carbon Dioxide Emissions	27,208 tonnes	21,139 tonnes	19,225 tonnes

The table shows that DRDL released an excess of 2,410 tonnes in 2005. In 2006, energy efficiency measures meant that its target was bettered by 3,659 tonnes. This was an excellent performance, more than redressing the balance from the previous year. In 2007, a further reduction of 1,884 tonnes was made – the CO2 emission target for 2007 was bettered by 5,543 tonnes.

Objectives for 2008

During 2008, DRDL aims to:

1. Continue its 'Environmental Performance Improvement Programme' to further its efforts to minimise any negative impacts from its activities.
2. Set out a program of work to enable progress towards ISO 14001 accreditation by March 2010.
3. Reduce indirect and direct CO2 emissions by reducing:
   - gas/oil consumption by 30%
   - non-operational electricity consumption by 1.5%
   - non-operational water consumption by 5%

NEW INITIATIVES IN 2007

Safety Culture Improvement

A step change in the drive for safety improvement was generated throughout 2007 by the introduction of Safety Culture Improvement Teams.

Safety culture can be defined as:

The mix of shared values, patterns and behaviour that gives an organisation its particular character.

Put simply 'it's the way we do things around here'.....

The safety culture of an organisation could be described as the ideas and beliefs that all members of an organisation share about risk, accidents and ill-health.

Some key elements of a strong safety culture are that:

- Everyone is personally responsible for safety.
- Leaders demonstrate commitment to safety.
- Trust runs through an organisation.
- Decisions reflect 'safety first.
- A questioning attitude is developed.

- Organisational learning is used.
- Safety undergoes constant review.

In 2007 two safety culture teams were formed within DRDL. The main aim was to improve safety culture by involving everyone in the 'safety conversation'.

The teams commissioned surveys to learn the perception of the workforce about safety and visited major, high performing companies to learn best practice.

Initiatives have included:

- The introduction of Time Out For Safety (TOFS). TOFS meetings run weekly, usually on Monday's, for 30 minutes, prior to the lunch break on the three shifts of the day. Small groups of employees, lead by a trained team leader, meet with the aim of discussing health, safety and environmental issues that affect them. A 'theme of the week' is set to stimulate discussion.
- The re-alignment of the company's various safety meetings and forums and
- Full involvement of the non-industrial and industrial Trade Unions (in particular, through the Company's Safety Representative Network).

These programmes required significant interface with and support from the central health and safety function including:

- Management of the feedback from TOFS meetings to identlfy important issues and prepare responses.
- Professional support scheduled to the new hierarchy of Accident Prevention Team and Safety Improvement Team meetings.
- Reconfiguration and alignment of the Executive Safety Improvement Group (ESIG) to support the Safety Improvement Teams. The attendance at ESIG was also expanded to provide representation from the Safety Culture Teams and the Trade Unions.

Many of the good initiatives from the Safety Culture programme will need to be progressed by the central health and safety function through 2008/09.

These include:

- Justification for the continued provision of safety support to the back shift.
- A pivotal role in the further development of the Trade Union Partnership.
- Introduction of a single point of contact for sick absence reporting so that opportunities for rehabilitation and recovery can be realised quickly.
- Roll out of Just Culture – a new process for dealing with contraventions of health and safety standards
- Introduction of TOFS in the support directorates.

HSE Newsletter

In November 2007, the first Company-wide HSE Newsletter was issued covering activities at Devonport and Appledore; a publication since named "Safety Matters" following a reader's competition. The magazine will be published every two months and provides an excellent platform for supporting the safety culture improvement programme and providing current information and articles on significant health and safety issues across the DRDL sites and nationally.

Celebrating Success

One of the key principles in developing and supporting improved an safety culture in the Company was the recognition, reward and celebration of "success". In 2007, this evolved in the form of charitable giving. People and groups who had made a significant contribution to safety improvement were offered the opportunity to nominate a charity of their choice to receive a cash sum.

There was scepticism in some areas that people would only be motivated by the prospect of personal reward, but nothing could be further from the truth. A real "feel good" factor was generated by the prospect of benefiting a worthy cause through support of safety improvement. Awards made under this scheme include:

- £500 donation by the Refuelling Group to the British Heart Foundation in celebration of the Group achieving 500 days without a lost time accident.
- A competition to provide a name for DRDLs HSE newsletter resulted in cheques for £50 going to Derriford Hospital League of Friends, the Bethany Bassom appeal and the PDSA.
- £100 to Cancer Research by one of DRDLs Fitters who recognised and acted promptly on a safety defect in materials supplied by a contractor.
- £200 to the neonatal intensive care unit at Derriford Hosital from a plant maintenance team who developed an improved safety inspection regime for its workplace.

NUCLEAR SAFETY

ROLES AND RESPONSIBILITIES

The organisation (DRDL) delivers key aspects of professional design and safety evaluations from a central engineering group into a local team that is directly embedded within the nuclear operational teams. This has helped bring focus to the extent of work tasks and the priority of issues consistent with the operational work programmes. Significant effort has been placed on improving the overall governing processes and procedures that are used to generate design and safety evaluations, this includes a review and rationalisation of key policies.

Nuclear Engineering Directorate

DRDL's Nuclear Engineering Directorate provides professional support to plant managers, nuclear and non-nuclear operations managers and acts as DRDL's Design Authority. The function has responsibility for the maintenance of the design intent and certification of designs for use across the entire infrastructure, operations and facilities throughout their life. The Directorate has responsibility for progressing new designs and modifications and for endorsing Certificates of Design as facilities are handed over from construction projects to operational control. The resources for this function are provided by professional, specialist designers, safety case engineers and technicians.

The Directorate also supports the through-life management of all assets, the production of Statements of Requirements, Safety Cases, technical studies, design substantiation reports and provision of examination, inspection, maintenance and testing procedures.

Safety Case Production

DRDL is required to have written documentation, (known as safety cases), to demonstrate that the safety of its nuclear operations is "tolerable" and the risks arising are "As Low As Reasonably Practicable" (ALARP). The documentation includes a description of the plant and the operations that will be carried out together with analysis that shows how the proposals meet the high standards that are an essential ingredient of all nuclear activities and operations. Safety cases that are categorised as having the highest level of safety significance are submitted to the regulators (Nuclear Installations Inspectorate and Ministry of Defence) for their assessment and agreement.

During 2007, there were no significant developments to DRDL's safety cases. This is a reflection of the stability of DRDL's nuclear activities, with no significant changes to the those activities being carried out on site; nuclear operations have continued safely under the existing safety cases, particularly the refuelling of HMS VICTORIOUS and the boronation of HMS TRIUMPH. However, significant progress is being made on a number of projects that consider the longer term developments and assurance of the DRDL nuclear and non nuclear site. Whilst these developments are not due to complete for several years, they will provide improved, modern standards facilities for SSN operational dockings and final defuelling. In parallel a number of facilities are commencing their Periodic Review of Safety Programme, this is a process that reviews existing designs and safety cases approximately every 10 years and evaluates whether further improvements or modifications should be considered.

Independent Peer Review

The role of the Independent Peer Review Department is to assess the adequacy of safety cases to ensure compliance with relevant Licence and Authorisation Conditions. Reviews are required to confirm that documents are of the right standard and content before they are submitted for final Safety Committee consideration prior to submission to the regulators.

This team is independent from those groups responsible for the production of safety cases and is composed of individuals who have many years' experience of interfacing with safety cases and NII Site Licence/MoD Authorisation requirements.

The IPR Manager, who reports to the Director of Nuclear, Safety & Quality, has a full-time Assessor augmented by external consultants as necessary.

As safety case programmes progress, IPR's critical, but constructive, approach is intended to pre-empt queries from the Safety Committee and regulatory assessment process. It also stimulates improvement in the presentation of complex arguments and ensures consistency and best practice across a broad range of submissions.

In 2007, the team was involved in the justification for HMS VICTORIOUS refit in 9 Dock and development of the safety case for the next two boats. The team reviewed safety cases for the Submarine Refit Complex (SRC) including Post Operational Clean Out of the core pond, equipment Decommissioning / disposals and other Future Nuclear Facilities proposals. We also peer reviewed changes to 10 Dock for the transition from submarine to surface ship use and Long-Term Berthing preparations for redundant submarines.

In 2008 IPR will:

- Provide the necessary and appropriate support to the nuclear submarine programme through a timely IPR and NSC programme
- Support NED / NSBU in improvement of Safety Documentation and associated processes.

REGULATORS

DRDL must ensure that its practices and procedures comply with an extensive range of legal and contractual requirements to ensure that the risks and any impact on people and the environment are minimised.

Two bodies regulate the nuclear part of DRDL's business. As the nuclear work is predominantly for the Royal Navy, the Ministry of Defence (MoD) retains a regulatory role in addition to the civil regulator, the Nuclear Installations Inspectorate (NII). Both regulators require DRDL to have comprehensive arrangements to operate safely and they regularly carry out rigorous inspections.

Civil Regulator

The NII is the Nuclear Safety Directorate of the Health and Safety Executive. It licences the part of DRDL's site at Devonport Royal Dockyard where nuclear operations take place. This is known as the Nuclear Licensed Site. As part of the Nuclear Site Licence, and in common with all nuclear installations, it imposes 36 separate conditions under which the licence is operated.

The NII nominates inspectors to visit the site on a regular basis. Its primary role is to ensure that the site is being operated in accordance with the licence and the conditions attached to it. It also ensures that all nuclear facilities are sufficiently robust to meet the demanding standards required for nuclear work. Dedicated site inspectors are supported by a number of assessors who closely scrutinise the company's arrangements and proposals.

MoD Regulator

The MoD regulator, the Defence Nuclear Safety Regulator (DNSR), authorises DRDL to carry out nuclear activities on both the Nuclear

Licensed Site and on adjacent waters. Whilst this Authorisation closely mirrors the Nuclear Site Licence it is concerned more with submarine plant and the infrastructure required to support it. DNSR works closely with the NII in carrying out assessments and inspections of the Licensed Site and of MoD Authorised activities.

Nuclear, Radiological and Environmental Assurance

Following changes made in October 2006 to consolidate resources for the assessment of nuclear and radiological compliance under a single Manager, the Nuclear Assurance Group has started to mature as a focused and experienced team. This has resulted in a more directed interface with the various Regulators and the delivery of a critical but constructive programme of audits and inspections. The Nuclear Assurance Group makes a routine monthly report to Directors, together with a six monthly assessment of the condition of compliance with the requirements of the Nuclear Site License and other governing legislation.

In general, the aim of the Nuclear Assurance Group is to identify shortfalls before any Regulator and to initiate remedial activity before being encouraged (or required) to do so by Regulatory Intervention.

Regulatory Interventions

Considerable effort has been expended in 2007 to address underlying issues for two formal Improvement Notices served by HSE/NII in 2006, in particular training and behavioural characteristics related to the Control of Work. Although the Company has effectively met regulatory requirements, there remain substantial long term programmes to take the Company well beyond historical norms of safety performance. The effect of these programmes will be measured over years and permanent changes are sought over and above short term improvements in statistics. This committed approach has been strongly supported by Regulators.

Formal Regulatory Intervention in 2007 has been confined to environmental matters, and in particular small levels of contamination in submarine docks. Although the actual levels of radioactive contamination are very low, in some cases at or below the normal level of detection, the shortfalls have been taken very seriously. Improvements in this area will be sought by the Environment Agency as the Company embarks on the major new projects in 2008.

AUDITS

Nuclear, Radiological & Environmental Audit Programme

A comprehensive, informed and critical audit programme has been completed during 2007 across a very wide range of activity. With the audit teams now up to full strength and with an experienced Compliance Manager driving the programme, nuclear audits have penetrated deeply into many aspects of activity on the Site. The improvement in delivering corrective action to audit findings commenced in 2006 has been sustained throughout 2007 and much credit is given by Regulators for these internal assessments.

The aim for 2008 is to further improve the knowledge and professionalism of the audit teams such that they may assist the new programmes of work for nuclear facilities and the consolidation of existing activities, and enable them to progress with the minimum of Regulatory Intervention. This would be the mark of a mature Licensee. It also makes very good business sense.

In addition to nuclear safety audits, 15 radiological safety audits were completed, and covered a range of activities. Five audits were carried out on the control of radioactive materials, three audits were carried out on Local Rules, and audits were also carried out on arrangements for emergency training, whole body monitoring, radon surveys, dosimetry, solid radioactive waste, and laundering of protective clothing. A total of 11 Non Conformance Reports were raised, and 62 Observations made on how processes/arrangements could be improved. Three NCRs are awaiting closure. The majority of audits were carried out against the DRDL Radiation Safety Standard. Radiological audits continue to provide sound evidence of compliance with the Ionising Radiation Regulations.

Objectives for 2008 include:- completion of at least 12 audits, adoption of a comprehensive system that ensures auditing of Environment Agency authorisation requirements, and operation of a radiological audits database.

Operating Experience Feedback

Operating Experience Feedback (OEF) is the process of recording and investigating events focused on preventing accidents and serious incidents. It achieves this by learning lessons from minor events to prevent recurrence where the outcome could be more severe. All personnel therefore are actively encouraged to report their concerns however small and insignificant they may seem in isolation.

2007 saw an increase in the number of events being reported, which is seen as a very positive indicator of an improving safety culture. Personnel are prepared to challenge practices and use the OEF process to initiate improvements and change.

All events reported are recorded onto a database available to most personnel. They can track event progress and review corrective actions/ lessons learned so they can introduce preventive actions in their own areas. The database has been improved and a more user friendly version released which makes processing an event easier and gives improved trending. Lessons learned are communicated to the workforce by several means.

DRDL continues to have strong links with other nuclear operators to exchange information on OEF processes and the lessons learnt from events. DRDL is a member of two Operating Experience and Learning Group Fora, one centring on civilian nuclear operators and one centring on operators, builders and maintainers of the nuclear submarine fleet. These are attended by most nuclear operators in the UK.

DOSIMETRY

The safety of employees and contractors is of primary importance to DRDL. In managing nuclear work DRDL is committed to the principal of ALARP. This means keeping any radiation doses to which people are exposed to "As Low as Reasonably Practicable".

Workers at Devonport may be exposed to low levels of radiation during the course of their normal work i.e. occupational exposure. These workers are separated into two categories: "Classified Persons", workers who are routinely employed in nuclear work and "Written Arrangement Persons", workers who sometimes work in a radiation area. Both types of workers carry personal dosimeters, which measure any radiation doses received.

DRDL's state-of-the-art computer-based dosimetry control system, which is considered to set the industry standard, shows in detail the relationship between doses received by individuals and the type of work being carried out. This assists in managing and minimising occupational exposure.

The Government sets statutory limits on the radiation doses which

workers are allowed to receive. As a matter of policy DRDL has set its own dose limits for its workers which are much lower than the statutory limits. Radiation doses are measured in millisieverts (mSv). When the doses of a group of people are added together it is referred to as the "collective dose" and measured in man-millisieverts (man mSv). The Ionising Radiations Regulations of 1999 set individual limits of 20 mSv per year for Classified Persons and 6 mSv per year for Written Arrangement Persons. DRDL's self-imposed limits are 15 mSv per year for Classified Persons and 4 mSv per year for Written Arrangement Persons.

Even if there is no radiation dose received as a result of occupational exposure, everybody on earth is exposed to radiation: from cosmic rays; from natural radioactivity deep within the earth; from naturally occurring radon gas; and even from various radionuclides taken into the body in diet. The average individual annual dose that people in the United Kingdom receive from these sources is about 2.7 mSv.

Collective and individual doses at DRDL are always kept as low as practicable through innovative dose management processes, specialised equipment and training. As expected the 2007 collective dose figure was similar to that of 2006 showing a very slight increase. No individual exceeded the DRDL self-imposed annual limits of 15mSv for Classified Persons and 4mSv for Written Arrangement Persons.

As anticipated the level of the nuclear work for 2007 was similar to that of 2006. The nuclear work programme for 2008 is expected to decrease slightly compared to that of the preceding years. This will include completion of HMS Victorious' refit, commencement of the HMS Vigilant refit and continuation of HMS Triumph's refit. Additionally there will be operational docking periods and maintenance support for Trafalgar Class submarines combined with decommissioning work for Swiftsure Class Submarines. Therefore it is anticipated that collective and individual doses for 2008 will reduce slightly compared to those of 2007. Doses will continue to be minimised by the use of Primary Circuit Decontamination processes, shielding and application of tight managerial controls.

	2003	2004	2005	2006	2007
Number of radiation workers	2229	1690	1743	1742	1642
Number of radiation workers with an annual dose > 0.0 mSv	1435	1416	1400	1479	1358
Average individual dose (mSv) > 0.0 mSv	0.49	0.45	0.30	0.34	0.39
Highest individual dose (mSv) of all radiation workers	5.06	4.93	2.56	2.59	3.00
Total collective dose (man mSv)	696	634	417	504	530

Whole Body Monitor

Routine reassurance monitoring (Whole Body Monitoring) is routinely provided to all workers where potential for internal exposures to radiation exist. Monitoring also provides assurances that protection measures taken are and remain effective. In addition to these routine arrangements, monitoring is available to any DRDL worker upon request. Incident monitoring only takes place if there has been an event where it is suspected that an intake of radioactive material may have occurred. Incident and some re-assurance may also include biological sampling for tritium. If a positive or borderline reading is found, the individual is sent to DRDL's HSE Approved Dosimetry Service for formal monitoring.

During 2007 reassurance monitoring was conducted for 84 personnel. None of these showed any detectable intake.

Incident whole body monitoring was conducted for 27 individuals. No individuals required referred for further monitoring by DRDL's HSE Approved Dosimetry Service (ADS). None of these showed any detectable intake.

In addition to whole body monitoring 14 individuals provided samples for tritium in urine assessment, with no positive results indicated.

Compensation Scheme

The Compensation Scheme for Radiation Linked Diseases is a national scheme administered jointly by participating employers and trades unions. At the end of every year the Scheme administrator issues an Annual Statement that summarises operation of the Scheme, and the Annual Statement for 2007 is provided below.

The Compensation Scheme for Radiation-Linked Diseases is a joint initiative between the UK's nuclear-sector employers and their trades' unions. The Scheme has been in existence for 26 years and the participating employers have expanded since its inception to include: Sellafield Ltd. Toshiba Corporation (Springfields Fuels Ltd.) United Kingdom Atomic Energy Authority, Urenco (Capenhurst Ltd), British Energy Generation Ltd, Magnox Electric Ltd, the Ministry of Defence, AWE plc (Atomic Weapons Establishment), Babcock Marine (Devonport Royal Dockyard Ltd), Babcock Marine (Rosyth Royal Dockyard Ltd), Babcock Marine (Clyde) Ltd, GE Healthcare and other related companies. The participating trades unions are the Civil Nuclear Constabulary Federation, the First Division Association, GMB, PCS, Prospect, UCATT, UNITE and UNISON.

Information about the Compensation Scheme is available to interested parties via the internet. The Scheme's website (www.csrld.org.uk) is designed primarily to provide relevant guidance to potential Scheme claimants but also gives contact information for those seeking further information. Over the past year the site has continued to receive many regular visits. The website has provided for many new Scheme claimants the mechanism to initiate their claim for compensation.

The Compensation Scheme is designed to provide an alternative to legal action for past and present employees of the above companies who have been exposed to radiation during their work and who are subsequently diagnosed to be suffering from cancer or cataracts. Cases which can be considered under the Scheme are assessed by the application of technical criteria jointly agreed between management and trades unions, which are more generous to the claimant than those likely to be used for a legal action. The Scheme contains further generosity in that it awards payments for cases with a causation probability of 20% or above, whereas in a court case a claimant must prove a causation probability of 50% where an 'all or nothing' approach based on the balance of probabilities would then be applied.

The Scheme is committed to employ the most up to date "best science" available as it is on this technical basis that claims are assessed. Accordingly the CSRLD is currently preparing through its Technical Working Party to change and adapt the Scheme`s technical basis in order to adopt the very latest scientific knowledge available from the US National Research Council BEIRVII Report and supportive data from the awaited UNSCEAR report (not yet published).

These reports constitute a major review of the health effects of ionising radiation.

On completion of the new technical basis and the necessary revision of the Scheme schedules the Scheme will undertake a retrospection exercise to consider previous claims in the light of new science and new schedules. A retrospection exercise would consider claims that may have failed in the existing Scheme schedules but would trigger payment in some of the new schedules.

NUCLEAR SAFETY

As in the previous year the Scheme has taken steps to ensure that the employees of those organisations affected by the creation of the Nuclear Decommissioning Authority (NDA) continue to have access to the Compensation Scheme. The NDA are fully supportive of the Compensation Scheme and have made it a condition of contract that any new Site Licensed Company must apply for membership to the CSRLD. This positive action can only strengthen the Scheme and provide greater coverage of the nuclear-sector employees.

The Scheme received a higher than average number of applications this year due to Scheme publicity. There have been 70 new eligible cases with four compensation settlements being made this year. Three claimants were employees of UKAEA and one claimant was a BNFL employee. There have been over 1400 cases in total since the scheme began and compensation totalling £6 million paid to claimants in respect of 114 successful claims.

This last year has been the first year of operating the CSRLD from Sellafield Ltd. since taking stewardship of the Scheme from BNFl plc. in 2006. There continues to be major changes in the infrastructure and shape of the nuclear industry and the nuclear-sector employers operating environment.

In the coming year the CSRLD Secretariat will endeavour to adapt to the changing environment, introduce new revised Scheme schedules and deliver initiatives to improve the efficiency with which claims are progressed to the satisfaction of the beneficiaries of the Scheme.

During 2007 DRDL received one claim for compensation. This was a joint claim with the Ministry of Defence. The claim has been unsuccessful, and is in the process of being closed out. There is currently one other case in progress, which is awaiting a complex dose reconstruction by the Ministry of Defence. The total number of cases received by DRDL since joining the Scheme in 1997 is 64, of which one has been successful.

Administration of the Scheme was transferred from British Nuclear Fuels Limited to British Nuclear Group (Sellafield) in 2006. The transfer has been complicated, and numerous difficulties were experienced during 2007. It is expected that there will be a return to normal service during 2008. The other main point of interest during 2007 was the continuing work towards changing the technical basis of the Scheme. Agreement has been reached that the technical basis of the Scheme will be updated to reflect recent research on the link between radiation dose and disease, and it is likely that the changes will be introduced during 2008.

DRDL objectives for 2008 include:- Revision of Claims Handling procedure, revision of DRDL Scheme booklet, and an assessment of the feasibility of incorporating contractors into the arrangements.

EMERGENCY PLANNING

DRDL berths, docks and refits/refuels nuclear powered submarines at Devonport Royal Dockyard. By adherence to strict safety routines the possibility of an accident that could affect the workforce or members of the public is reduced to extremely low probabilities. Despite these very low probabilities, DRDL has legal, moral and commercial reasons to ensure that adequate emergency arrangements are always in place to deal with such an accident.

DRDL and the Ministry of Defence have a joint response plan to respond to an accident resulting from the nuclear or radiological operations within the Devonport site. These arrangements deal primarily with the workforce, since Devonport Site Accidents have very little potential to affect members of the public.

DRDL and the Ministry of Defence also have a joint plan to respond in the unlikely event of a reactor accident onboard a nuclear powered submarine, Devonport Nuclear Safety Orders (DEVNUSAFE), which covers the on-site arrangements for dealing with this type of accident.

Following extensive training, exercising and a demonstration exercise witnessed by the Nuclear Installations Inspectorate (NII) in April, DRDL commissioned a new Forward Command Post in June 2007. This completed DRDL's modernisation of its on-site emergency facilities to respond to a Devonport Site Accident ensuring they continue to meet modern standards.

On-site emergency response personnel and emergency services personnel are trained in both of the emergency response plans and rehearse them in training exercises. The arrangements to both plans are demonstrated annually to the Nuclear Installations Inspectorate (NII) and the Defence Nuclear Safety Regulator (DNSR). In June 2007 DRDL demonstrated the adequacy of its emergency arrangements, by exercise, to both the NII and DNSR. This exercise involved a simulated radiography accident occurring within the Submarine Refit Complex outside of normal office hours in order to demonstrate the out-of-hours response. Casualty handling, evacuation and accountability of staff and the use of the SRC Forward Command Post were also key objectives of the exercise all of which were successfully demonstrated.

Although very unlikely, assessment has shown that a radiological hazard from a reactor onboard a nuclear powered submarine could extend beyond the Devonport Site. Plymouth City Council produces and tests the off-site emergency arrangements in response to a radiological hazard extending beyond the Devonport site. This plan, previously called DEVPUBSAFE, was re-written by Plymouth City Council during 2007 and renamed the Devonport Off-Site Emergency Plan. This plan details the contingency plans for a number of organisations including DRDL, Ministry of Defence (MoD), local authorities and the emergency services for the protection of the public. The Devonport Off-Site Emergency Plan is publicly available and is held in the reference section of local public libraries.

In addition to DRDL's annual demonstration exercise DRDL participated in the MoD's annual demonstration exercise and Plymouth City Council's 3 yearly test of the off-site plan, both of which were successfully demonstrated in Short Sermon 07 on 10th October 2007.

TRAINING – NUCLEAR AND RADIOLOGICAL

It is important that all people employed within the Nuclear Licensed Site are competent to carry out their roles. Training plays a vital part in ensuring nuclear and radiological safety. In addition to general skills training, managerial and development training and health and safety training, DRDL puts significant emphasis on specific radiological and nuclear training.

Nuclear training follows guidance laid down by the International Atomic Energy Authority (IAEA) and is carried out both internally and with other specialist training providers. The Royal Navy provides much of the specialist educational training concerning the submarine, the nuclear submarine plant and nuclear safety issues associated with it. These courses range from one week to 6 months.

DRDL trains engineering and science graduates to become safety case engineers and to develop their skills within the company. This includes specialist external nuclear safety training and involves working closely with the University of Lancaster to educate DRDL graduate trainees and other graduates to achieve a Master of Science Degree in Safety Engineering.

Radiological training is given to all employees working in nuclear areas. Every person who works within designated radiological areas is required to be retrained every two years with additional training available in techniques to keep radiation doses 'As Low As Reasonably Practicable' (ALARP)

RADIOACTIVE WASTE DISPOSAL

DRDL generates solid, liquid and airborne radioactive wastes as a consequence of carrying out its central business function of refitting, refuelling, maintaining and repairing nuclear-powered submarines for the Ministry of Defence (MoD).

DRDL must dispose of its radioactive waste in accordance with a Certificate of Authorisation granted by the Environment Agency under the Radioactive Substances Act 1993. The current Certificate came into force in March 2002. The Authorisation specifies the maximum amounts in volume and radioactivity that DRDL is allowed to dispose of in either a calendar year or a rolling 12 month period. The limits set are such that, even if disposals or discharges took place at these limits, the radiological impact on the most exposed members of the public would be a small fraction of the national and international dose limits. DRDL continues to operate well below its authorised radioactivity limits.

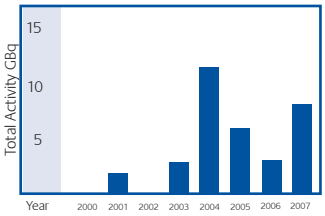
The Certificate of Authorisation includes a number of Schedules with specific requirements. Schedule 9 details a number of requirements for additional information and improvement, which have to be submitted to the Environment Agency within certain time constraints.

Solid low level and very low level radioactive waste is disposed of to authorised sites in accordance with DRDL's Certificate of Authorisation. Liquid waste arising directly or indirectly from the nuclear submarine reactor system is treated to reduce radioactive contaminants before being discharged to the river. Secondary radioactive liquid wastes (e.g. arising from change rooms and the laundering of protective clothing used in radiological controlled areas) are discharged to the dockyard sewer. Airborne waste is discharged via authorised outlets and in accordance with the Certificate of Authorisation. All disposals and discharges meet current radiological environmental standards.

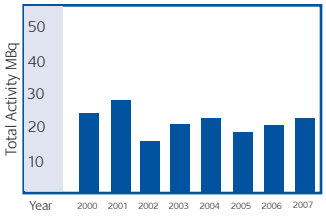
The following graphs compare DRDL's disposals/discharges of radioactive waste from Devonport Royal Dockyard during 2007 with those in previous years:

Radioactive Waste Disposals made during 2007

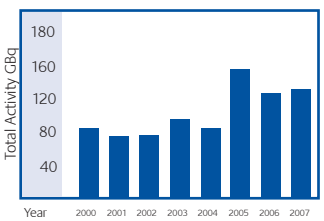
Solid low level waste to Winfrith / LLWR near Drigg



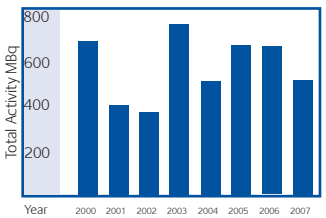
Solid very low level waste to licensed landfill



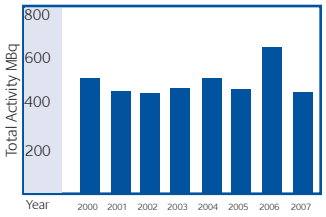
Liquid radioactive waste to the Hamoaze – Tritium



Liquid radioactive waste to the Hamoaze – Other Radionuclides



Liquid radioactive waste to the sewer



Small amounts of intermediate level waste are sometimes generated during the company's operations. Whilst the Government has approved, and is starting to implement, the recommendation of the Committee on Radioactive Waste Management (CoRWM) that a geological facility is required for intermediate and higher level radioactive wastes, there is currently, no facility within the United Kingdom for the disposal of intermediate level waste. Consequently, this waste has to be stored on site until either the level of radioactivity decays to the point where it can be reclassified and disposed of as low level waste, or, a national repository becomes available. In the interim, the small quantity of intermediate level waste generated at Devonport is stored safely in approved facilities on DRDL's licensed site.

No high level radioactive waste is generated during DRDL's operations. The Ministry of Defence manages the removal of used nuclear fuel from the dockyard and its onward transport to Sellafield for storage and possible reprocessing in the future.

DRDL has a radioactive waste management policy designed to justify the need for, and then control, all work that could generate radioactive waste. The company policy also includes the requirement to minimise radioactive waste arisings, disposals and discharges using Best Practicable Means (BPM) and to dispose of radioactive waste from the site as quickly as possible in order to minimise the amount held on site. When planning nuclear work DRDL conducts reviews to assess how much waste will be generated and then takes every practicable step to minimise that waste. No new work that would generate radioactive waste is started unless there is an approved way of disposing of or storing the waste. Records of all disposals are reported to the Environment Agency.

DRDL will be applying to the Environment Agency for a variation to its radioactive waste disposal authorisation during 2008 to allow the Company to dispose of a number of radioactive wastes that are currently stored on site. This will allow DRDL to further reduce the quantity of radioactive waste stored on its nuclear licensed site in accordance with its policy.

Events

There were two events with implications for DRDL's radioactive waste disposal authorisation during 2007. The first concerns the detection of low levels of activity in a drainage gully in 9-Dock, and the second concerns the discharge of very low level active waste water to the sewers.

The activity detected in the 9-Dock drainage gully was found from a routine sampling operation that had been put in place at the beginning of 2007 as part of a re-assurance monitoring programme. The levels of radioactivity found were very low. Never the less DRDL initiated a formal investigation immediately to identify how the material had got into the drainage gully. The regulators also took an interest in this event as it had the potential to be in breach of our discharge authorisations because any release to the environment would not have been via an approved route. Although the investigation found no measurable

release into the environment it failed to identify the cause of the event. However a number of recommendations for improvement were identified and these are being implemented.

The second event, which resulted in a Site Warning letter from the Environment Agency, was associated with potentially radioactive water that is discharged to the sewer. Such water comes from facilities that have the potential for radioactive contamination, but in practice rarely has levels of contamination above limit of detection. As part of our discharge authorisation this water has to be discharged such that it goes to the Camels Head Sewage Treatment Works (CHSTW). Unfortunately early in 2007 there were problems with the pumping station that discharged sewage to CHSTW and so arrangements were put in place to divert the sewage to an alternative treatment works. This diversion then persisted for most of 2007. The significance of this error in radiological terms is extremely low, but since our discharge authorisation requires such discharges to go to CHSTW and they did not, DRDL were in technical breach of their authorisation, which resulted in the Environment Agency's Site Warning letter. DRDL have responded to the Environment Agency regarding this event and have identified a number of measures for improvement, all of which are being implemented

ENVIRONMENTAL RADIOACTIVITY MONITORING

DRDL carries out regular surveys of radioactivity in the environment in accordance with the requirements of its Authorisation for the discharge of radioactive waste, which was issued by the Environment Agency and came into force in March 2002.

Monitoring for radioactivity in the marine environment is carried out at various locations along the banks of the Rivers Tamar, Lyner, Tavy and Plym. Measurements are made of environmental gamma dose rates and samples are taken of the sediment along the low waterline, and of seaweed, mussels and river water at various points. The monitoring points and arrangements for monitoring, sampling and analysis have been agreed with the Environment Agency.

DRDL's marine environmental radioactivity monitoring and sampling programme is carried out quarterly in January, April, July and October every year. On each occasion the survey takes place over two days and includes four points on each side of the River Tamar, along the section known as the Hamoaze. Additional points at Calstock, Bovisand Bay, the top of the River Lyner (at St. Germans) and the River Plym are included in the July survey. Samples of fish are also taken in July. The results from these quarterly surveys are forwarded to the Environment Agency and the Food Standards Agency.

In 2002, DRDL's environmental radiation monitoring regime was further developed to include an airborne radioactivity monitoring programme. This involves the sampling of air, using a High Volume Air Sampler (HVAS) and the collection, sampling and analysis of rainwater.

All the results obtained from the marine and airborne radioactivity monitoring programmes are included in DRDL's Annual Environmental Radioactivity Monitoring Report, the most recent one of which (2006) can be viewed at www.devonport.co.uk. The Annual Report is sent to a number of organisations including the regulator and the local authorities, which place a copy on the Public Register.

The Ministry of Defence's Dstl Environmental Sciences Department carries out similar annual surveys at all nuclear submarine berths. Its Devonport and Plymouth area survey is carried out in conjunction with DRDL. Results from this joint survey are published annually by DRDL, and by MoD through The Stationary Office (TSO).

Government Agencies (including The Environment Agency and the Centre for Environment Fisheries and Aquaculture Science (CEFAS) on behalf of the Food Standards Agency) and Local Authorities carry out surveys of radioactivity in the environment across the country, including the area around Plymouth. These results are also published once a year and are consistent with the results published by DRDL.

To facilitate comparison of the various surveys carried out in the Plymouth area, results from the Local Authority, Environment Agency/Food Standards Agency/CEFAS, Dstl and DRDL surveys can be viewed at www.devonport.co.uk. These extracts are shown with kind permission of the respective authors and publishers, and are taken from the published reports for 2006. These will be updated for 2007 when all of the reports are available for that year. Some differences between the results are to be expected because of the statistical uncertainties inherent in the measurement of radioactivity at the low levels present in the environment.

The results of DRDL's marine environmental monitoring programme, and the other surveys mentioned above, demonstrate that the impact of radioactive liquid discharges from the dockyard on the local marine environment is so low that its contribution to the natural background radiation dose rate is indistinguishable. DRDL therefore has to assess the impact using theoretical models into which data from radiochemical analysis of the samples collected during the quarterly surveys is used. For the year 2007 the dose to the most exposed members of the public (usually referred to as the 'critical group') as a result of DRDL's discharges was assessed to be no greater than 0.003 mSv. This dose is well below the statutory limit and constraints for members of the public and is over 800 times less than the UK average background radiation dose of 2.7 mSv per year.