The Nuclear Department, Royal Naval School of Marine Engineering – Provision of Nuclear Education and Training to the Naval Nuclear Propulsion Programme and Beyond

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The Nuclear Department (ND) of the Royal Naval School of Marine Engineering was formed within HMS SULTAN on 1 April 2001, following the integration of SULTAN's existing Nuclear Training Group and the Department of Nuclear Science and Technology, relocated from the (old) Royal Naval College Greenwich, London in October 1998. Both groups have a distinguished history with officers courses established at Greenwich in 1959 and ratings training established at HMS SULTAN in 1963. This collocation of nuclear systems' training, academics, and research placed, for the first time, the majority of Naval Nuclear Propulsion Programme (NNPP) shore based education and training on the one site. As systems training and education in nuclear reactor technology are integral to most courses offered by the Department, the integration enhanced aspirations to establish a centre of excellence in nuclear engineering within the Royal Navy School of Marine Engineering, which is part of the Naval Recruiting and Training Agency. The ND is also an Associated Institution of the University of Surrey with which it has had an alliance for almost 20 years.

The Department's primary purpose is to provide education and training for all naval and civilian personnel appointed to the NNPP and its secondary purpose is to provide research, consultancy and expert advice in support of the Programme. With over 40 years proven experience in the provision of high quality nuclear education and systems training the ND presently offers over 45 scheduled courses in all key disciplines, from 'cradle to grave', to a broad group of key customers. Five academic courses attract post-graduate qualifications, that are validated by the University of Surrey, whilst the majority of ND's NNPP systems training courses are necessary prerequisites for both officers and ratings in order to qualify as nuclear submarine reactor and propulsion plant watch-keepers.The ND has a number of facilities and equipments that support education and training. These include high-fidelity (full scope) reactor plant simulators covering all in-service nuclear submarine propulsion plants, modern well-equipped radiation science/protection laboratories, extensive materials and chemistry laboratories, high pressure steam facilities, a bespoke irradiation facility, various maintainer training aids and an educational basic principles simulator (Telewall), capable of mathematically modeling and graphically displaying the load following and self regulating characteristics of a Pressurised Water Reactor (PWR) and its associated systems.

In addition to the traditional and often mandated naval operator and civilian educational courses outlined above, ND offers a range of bespoke on site and peripatetic educational and training courses to both the NNPP and the wider UK nuclear industry. These commercial courses are normally delivered by ND staff and are subject to formal contract, which is administered by Flagship Training Ltd (FTL), the commercial partner of the Naval Recruiting and Training Agency (NRTA). FTL was formed in December 1995 through a joint venture, the present main partners being BAE Systems and Vosper Thorneycroft (UK).

The Nuclear Department of the RNSME is considered to be a 'one-stop' facility, capable of providing a very wide range of nuclear academic, training, research and consultancy services to the NNPP and, increasingly to some parts of the UK's nuclear industry. The Department aspires to excellence in education and training in nuclear power disciplines and in so doing, it contributes to the inculcation of the necessary safety culture required to responsibly design, build, operate, maintain, refit and finally decommission the nuclear fleet. In providing this vital support to the NNPP the ND augments its delivery of education and training with external lecturers from Service and civilian organizations working at the 'coal face', thus balancing academics with practical engineering challenges. The educated and trained strength is therefore totally fit for purpose for the Fleet and organizations that support the NNPP.