

Nymphsfield Nuclear Ltd



EurPhys Martin Edward Phillips MA PhD CPhys MInstP CRadP MSRP

Martin has worked in the nuclear industry since 1979. His career has spanned research into the behaviour of radionuclides in gas-cooled reactors, measurements of radioactive species in Magnox, AGRs and PWRs for operational and decommissioning purposes and assessment of radioactive inventories in just about anything. He has been responsible for developing capability and managing teams in environmental and plant measurements of radioactivity, shielding and radiological protection, and in radwaste management.



Date of birth: 12th June 1954

Education / Qualifications: 1972 - 1975: Trinity College, Cambridge: MA in Natural Sciences (Pt 1a in mathematical physics; part 1b in physics with mathematics; part 2 in experimental physics)
1975 - 1978: The Medical College of St. Bartholomew's Hospital, University of London (School of Physics): PhD in measurement of the electric field gradient tensor at metal binding sites of macromolecules in solution using perturbed gamma ray angular correlation.

Civil Status: One wife, two children (born 1994 and 1995)

Memberships: Institute of Physics (Member, Chartered Physicist; European Physicist), Society of Radiological Protection (Member, CRadP)

IT Training: Experience includes MS Office suite; Libre Office; Microshield - Dose rate calculations; HTML editing; gamma spectral analysis packages (Fitzpeaks and others); FISPACT; @Risk. Familiar with Linux (Ubuntu) and Windows.

Language Skills
English: mother tongue
French: good at reading. Spoken language / listening / written skills adequate.
Spanish: self-taught basic understanding, moderate ability in reading.
German: basic skills in reading, speaking and comprehension.
Italian: very basic, self-taught understanding.

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Recent Employment Record:

Present:

Company Director of Nympsfield Nuclear Ltd.

I resigned (amicably) from Babcock International in July 2011 to pursue life as a consultant, specialising in radiological assay / characterisation and radwaste management.

Recent contracts and projects include:

- Assessment of Magnox ILW vault inventories (fuel element debris, miscellaneous activated components etc)
- Consultancy on disposability and data requirements of miscellaneous wastes
- Production of LLW waste characterisation documentation and justifications
- ILW waste assay system physics design assessment (HRGS for Magnox cladding))
- Assessment of characterisation data on historic LLW wastes (Ispra, Italy)
- Specification of sampling designs for decommissioning (Lyon, France) (report written in French)
- Specification of assay equipment (France and UK)
- Design and use of assay systems for Magnox activated ILW (dose rate probe)
- DQO studies for waste disposal
- Studies on mobile laboratories
- QA assessment for neutron fluence monitor measurements

1999 to 2011

British Nuclear Group Project Services / VT Nuclear Services / Babcock International (from July 2010): Technical Manager, Radiological Characterisation and Assay (to 2009) / Principal Consultant (most recently)

Leading a project team of up to 25 staff, mainly in support of decommissioning of Magnox NPPs. At various times the following areas of work have been supported:

Expert support to radwaste retrieval and packaging projects (V/LLW and ILW) in physical and radioactive characterisation of wastes, in determining options for waste handling, processing and packaging and in physics design of assay techniques. The latter include not only installed plant, but also mobile and in-situ investigative techniques for the cost-effective assay of small accumulations of waste.

Plant investigation projects, to investigate the nature and extent of contamination or activation in NPP facilities. Investigations have included development of methods for automated survey of large structures, underwater measurements, and sampling and radiochemistry of plant. Work has been undertaken on all UK reactor types (ie Magnox, AGR & PWR).



Shielding design and radiation protection projects, including RAW packaging and retrieval, design of waste stores and repositories.

Studies and detailed uncertainty analysis on discharges of C-14 and H-3 from shut-down Magnox reactors.

High-accuracy assay of neutron fluence monitoring specimens from Magnox, AGR and PWR reactors, including overseeing work in Helsinki, Finland on behalf of British Energy.

Environmental measurements and radwaste assay, investigating environmental contamination on 12 separate UK sites, completing a complex survey of measurements to fully characterise a site for de-licensing purposes, advising waste producers on options for disposal and characterisation of V/LLW.

Duty Emergency Controller for Berkeley Nuclear Licensed Site emergency scheme (2004 - 2005), Duty Executive Officer from 1995 - 2004, both posts with responsibility for the safety of up to 1400 staff.

External examiner for the Postgraduate Certificate in Radioactive Waste Management and Decommissioning course at Birmingham University (2004 - 2009)

Member of editorial board of "Nuclear Futures", the joint journal of the British Nuclear Energy Society and the Institution of Nuclear Engineers (to 2009).

In 2009 I handed over my managerial responsibilities to a colleague to enable me to move to a four day working week.

1995 - 1999

Magnox Electric plc

Team Leader, Plant and Environmental Measurements

Management of projects in support of decommissioning of Magnox plant and of Operational Plant Studies (Magnox, AGR and PWR). Projects included:

- Development and deployment of equipment for surveying of site radioactive contamination
- Consultancy in Vienna to IAEA on site characterisation
- Investigations of environmental contamination by radioactive material
- Radiological safety case assessment and Radiation transport calculations (AGR and Magnox)

1992 - 1995

Nuclear Electric Ltd

Facilities Group Head

Duties included:

- Use of high resolution gamma ray spectrometry in high dose rates
- Facilities and laboratory management for a radiochemical / radiometric facility supporting 30 staff
- Measurement of gaseous discharges from nuclear plant

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- Specialist studies of radionuclide behaviour in operational plant (AGR, PWR and Magnox).

Earlier Experience Summary:

Research Officer in CEGB/Nuclear Electric

Work was undertaken on many projects, including:

- Studies of activity transport of volatile and particulate materials in gas cooled reactors (AGR)
- Calculation methods for estimation of radiocaesium deposition in AGR gas circuits
- Quality Assurance Engineer and Radiological safety case specialist

In the period 1989 - 1994, Team Leader for many campaigns of work at various Spanish NPPs undertaking programmes of measurements using in-situ gamma ray spectrometry in high dose rates in the primary coolant circuits. This work was in support of studies to understand and reduce occupational radiation exposure during maintenance of PWR NPPs, and work continued until 2006 at Sizewell B PWR (UK).

Personal Interests:

Running; cycling (unicycling and more conventional styles); canal boating; skiing; amateur radio; morris dancing; organiser of Stroud Mummers. Member of branch committee of Inland Waterways Association. Helps with many canal-related events. Recently completed organising a major canal festival in June 2012. Enjoys cooking food, making charcuterie and brewing beer.

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