Checkendon Hill Ltd
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DR SIMON P WALKER

An experienced nuclear energy scientist and engineer, widely engaged in consultancy in the nuclear industry, and leading a large university group of researchers at Imperial College, supervising a portfolio of research projects.

CAREER HISTORY

Present **Imperial College**

- Head, Nuclear Research Group, Mechanical Engineering, Imperial College. This group, of about 30 researchers, is engaged in a variety of research into nuclear reactor behaviour and safety problems. These are variously funded by government Research Councils and industry, and address issues in nuclear thermal hydraulics and accident analysis, nuclear safety, and reactor physics.

A selection from his present ~12 current research contracts:-

- Corporate Risk Associates: Risk assessment methods development for nuclear power
- Rolls Royce: Development of analysis methods for nuclear thermal hydraulics
- Research Councils: A suite of four grants to support collaboration with the Babah Atomic Research Centre, Mumbai, in areas of nuclear power development of common interest to the UK and India
- Ascomp (Zurich); Work on methods development for the fundamental study of nuclear boiling processes.
- National Nuclear Laboratory: Light water reactor coolant chemistry studies

Present **Checkendon Hill Ltd**

Engaged in an extensive portfolio of consultancy in the nuclear industry and related sectors, via Checkendon Hill Ltd.

Current relevant engagement include:-

- Department of Energy & Climate Change: Leading a consortium engaged in a study of the license-ability of small modular reactors in the UK.
- Ministry of Defence: Member, Research Programmes Group (a high level policy group advising MoD on its nuclear reactor research programme).
- Ministry of Defence: Review and advisor work on approving methods to be employed in submarine nuclear reactor design.
- Rolls Royce: Advisory work on various aspects of the submarine nuclear programme)
- SKF (Sweden): Advisory work on nuclear liabilities issues

Previous relevant engagements:

- Department of Energy & Climate Change: Advisory work on UK national needs in nuclear reactor thermal-hydraulic analysis.
- Expert witness, engineering analysis, risk analysis, High Court, London
- Consultant to HSE (ONR) on the HSE Generic Design Assessment
- Eversheds LLP: Engaged to provide seminars to staff and clients on nuclear engineering economic and technical issues.
- EdF / BE: Analysis of ARG temperature issues.
- Laing O'Rourke: Technical 'nuclear' aspects of new build.
- Department of Energy: An assessment of the UK fusion energy programme, and its economic prospects.

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1981-1983 **Shell Canada Ltd (Alberta)**

- Performing economic analyses of oil and gas development, assessing the profitability of new opportunities for the production and processing of natural gas and gas liquids in Western Alberta.
- Led a team of engineers providing engineering support to a number of gac processing plants spread along the Rocky Mountain foothills

1980-1981 **Shell International (The Hague)**

- Provision of technical support and consultancy to Shell operating companies worldwide from the engineering head offices in The Hague.

1977-1981 **United Kingdom Atomic Energy Authority**

- Studies of the performance of AGR fuel in accident conditions
- Experimental work on the equation of state of irradiated nuclear fuel
- Fast reactor severe accident analyses

QUALIFICATIONS

PhD (Imperial College)
BSc (Eng) First Class Honours) (Imperial College)
Associate, City & Guilds Institute
Diploma of Imperial College
Fellow, Institution of Mechanical Engineers
Fellow, Institution of Engineering and Technology
Chartered Engineer

PUBLICATIONS

(2015 Journal papers only)

[1-6]

1. Thakrar, R., J. Murallidharan, and S.P. Walker, *Simulations of High-Pressure Subcooled Boiling Flows in Rectangular Channels*, in *Nuclear Engineering and Design (to appear)*
2. Sebilleau, F., R.I. Issa, and S.P. Walker, *Analysis of the turbulence modelling approaches to model buoyancy driven counter-current flow in a tilted tube*, in *Flow, Turbulence and Combustion (to appear)*
3. Dasgupta, A., et al., *Wave structures and behavior in churn and annular flows in vertical tubes*, in *Multiphase Science & Technology (submitted)*
4. Cinosi, N. and S.P. Walker, *CFD Analysis of Localised Crud Effects on the Flow of Coolant in Nuclear Rod Bundles*, in *Nuclear Engineering and Design (to appear)*
5. Chandraker, D., et al., *Validation of the Dryout Modelling Code, FIDOM*, in *Nuclear Engineering and Design (to appear)*
6. Carasik, L., et al., *URANS Simulations of Thermal Stratification in a Large Enclosure for Severe Accident Scenarios*, in *Nuclear Engineering and Design (to appear)*

Previous: ~140 total journal and conference papers.