

Terms of Reference

- **Organisational Terms of Reference**
- **1. Purpose:** To enable the academic and industrial communities of Wales and the wider UK to establish a sense of ownership of BWR technology, and participate in research and development relating to this and future generations of boiling water reactors.
- **2. Objectives:**
 - To deepen and enhance the understanding of BWR Technology in Wales and the wider UK.
 - To facilitate knowledge transfer of BWR technology from Japan to Wales and the wider UK.
 - To develop a deeper and broader pool of independent expertise on BWR technology across Wales and the wider UK.
 - To enhance collaboration between Wales and the wider UK and Japan in relation to BWR technology.
- **3. Structure:**
 - The network will be operated jointly by the Imperial College Centre for Nuclear Engineering and Bangor University.
 - The network will engage all interested parties, including industry in the UK and Japan, Governments (UK, Welsh and Japanese), the EPSRC, Universities in the UK and Japan and other institutions conducting relevant research, such as NNL. A key principle of the BWR Research Network is that it will be inclusive.
 - To secure stakeholder trust, the BWR Network must remain neutral, independent and transparent.

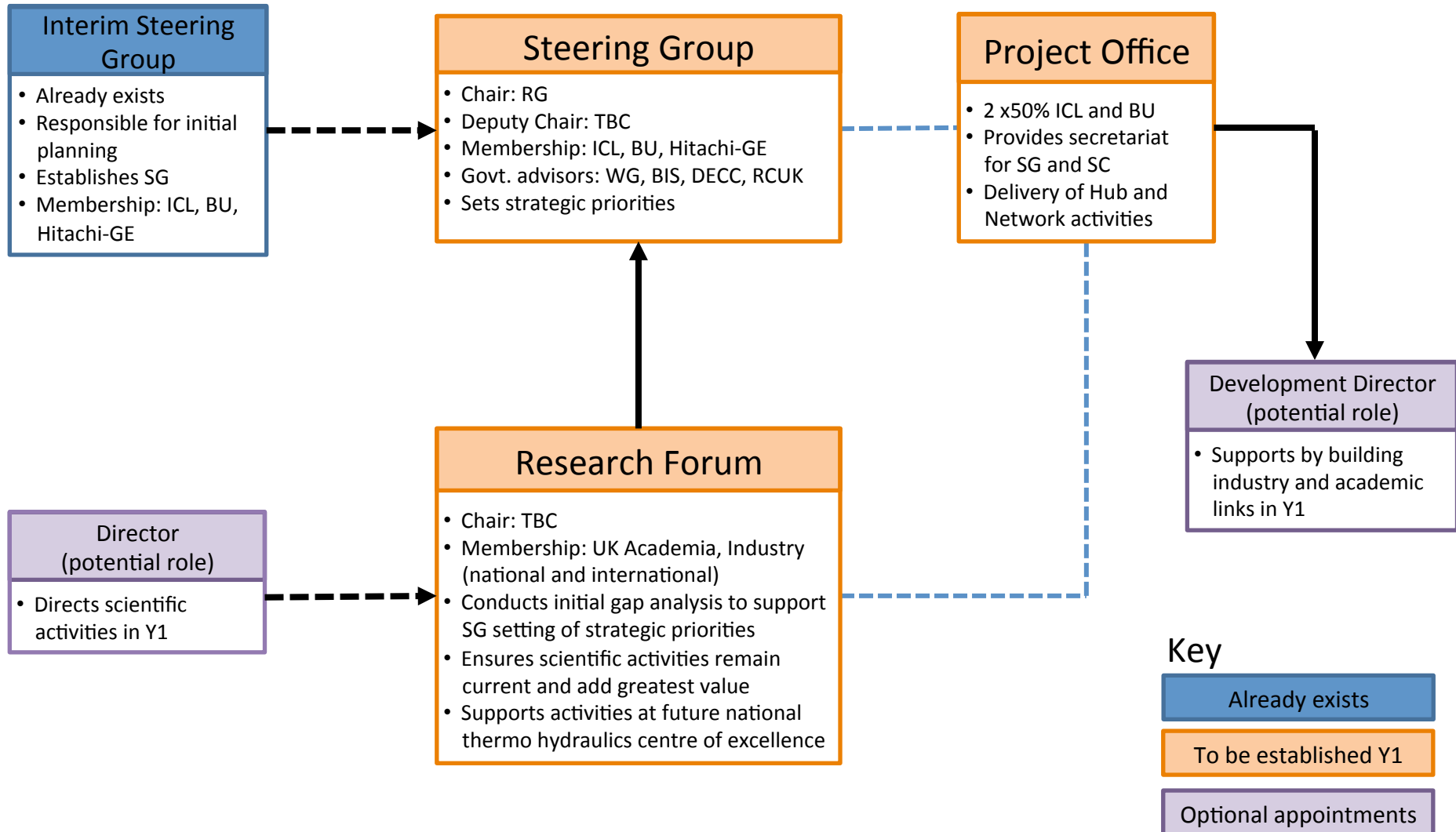
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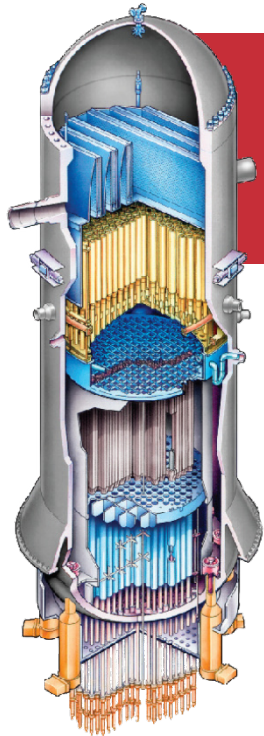
- **4. Activities:**
- Identify research requirements for current and next generation BWR technology through dialogue with industry and provide a mechanism to deliver NIRAB research recommendations in the field of BWR research.
- Facilitate the development of, and add value to, high quality research proposals from university and other research groups through workshops and conferences.
- Provision of expert advice on BWR research and technology to governmental organisations and other public bodies.
- Providing an authoritative but independent voice on BWR technologies for schools, the general public and others with the capability to provide seminars, lecture courses and authoritative information.
- Support and facilitate opportunities for Universities and institutions to provide staff/student internships between the Japan and UK.
- **5. Organisation:**
- **5.1 Steering Group:** The Steering Group will oversee the establishment of the BWR Research Network and monitor its operation, management and effectiveness. The Membership of the Steering Group will be drawn from the founding partners (Imperial College and Bangor University); BWR technical partners Hitachi and Horizon and supply chain partners such as Amec-FW, the Welsh Government, the UK Government; and other interested parties; in particular the EPSRC and the National Nuclear Laboratory. The Steering Group will be chaired by a senior figure from nuclear academia or industry.
- The first meeting of the Steering Group will be face-to-face. Thereafter, meetings will be held by teleconference or face- to- face as appropriate.

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- **5.2** The Research Forum will invite, assess and help develop research proposals to be sent to funding bodies. The Chair of the Research Forum will be chosen by the Steering Group. The Membership will be experts from industry, academia and government bodies and will also be chosen by the Steering Group.
- Meetings of the research forum will be held after e-mail despatch of the proposals, feedback by e-mail, and then by teleconference.
- **6. Secretariat and Director:**
- The Secretariat will be provided by the founding partners. The Secretariat will be responsible for preparing and circulating the papers for the meetings of the Steering Group and the Research Committee, minute taking for the meetings and correspondence with the applicants.
- The Secretariat will also be responsible for the organisation of conferences, publicity and outreach materials, as directed by the Director of the network, in consultation with the Chairs of the Steering Group and the Research forum
- The Director will be someone with wide experience of the research funding scene in the UK, and will be familiar with the nuclear industry

BWR Research Hub and Network





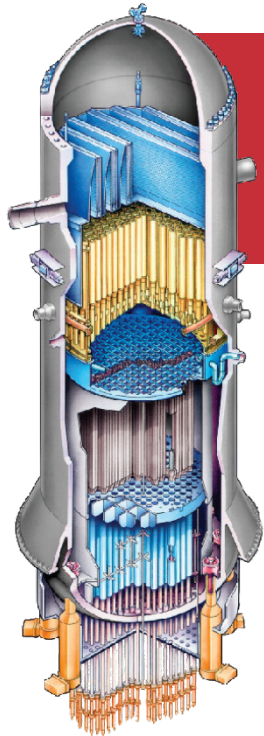
Conference and workshop on the Research Needs of Boiling Water Reactors

- The first Boiling Water Reactors (BWR) to be built in the UK are expected to generate electricity by 2025. The first UK Advanced Boiling Water Reactors (ABWR) will be located at Wylfa Newydd on Anglesey, and are of proven technology.
- BWRs will, like all types of nuclear reactors, need to produce electrical power more economically, for longer periods of time, be compatible with increasing levels of renewable generated electricity, and satisfy the stringent expectations of the regulators.
- To achieve these targets, research is needed on a range of topics including natural buoyancy driven thermal hydraulics, two phase flow, grid compatibility, accident tolerant fuels, improved materials and manufacturing processes, & more accurate condition monitoring and NDE.
- This conference will open with presentations from Hitachi-GE Nuclear Energy, Ltd. Chief Engineer Kumiaki Moriya.
- The presentations will be followed by workshops on research needs of the next generation of BWRs and for the UK's plans to support construction and operation of UK-based ABWRs.

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Conference and workshop on the Research Needs of Boiling Water Reactors

25th October 2016

- 13.00-14.30 Lunch and registration
- 14.30 Overview of the Research Needs of the Next Generation of BWRs by Chief Engineer – Kumiaki Moriya –Hitachi-GE Nuclear Energy, Ltd.
- 15.00 Q&A
- 15.30 Tea
- 16.00-18.00 Detailed presentations on Research Needs for thermal hydraulics, accident tolerant fuels, reactor materials and manufacturing methods, condition monitoring and NDE by Hitachi design and research staff.
- 18.00-18.30 Q&A
- 18.30 Presentation on Wylfa Newydd project
- 19.30 Hot buffet dinner

- 10.30
- 11.00
- 12.00
- 13.00
- 14.00
- 15.30
- 16.30
- 17.30
- 17.45
- 19.30

- manufacturing methods, condition based monitoring and NDE
- Tea and Coffee
- Continuing discussion in break out groups
- Plenary session when break out groups report findings and recommendations for research projects
- Lunch
- Discussion of research projects and prioritisation in breakout groups.
- Plenary session when each break out group reports prioritised list projects
- Q&A
- Session closes
- Free Time
- Conference Dinner

26th October 2016

- 09.00 Workshop on Research Needs. Four break out groups appoint a team leader and discuss research needs for their specialist topic e.g. thermal hydraulics, accident tolerant fuels, grid compatibility, reactor materials and

- 09.00
- 10.00
- 12.00

27th October

- Funding opportunities
- Next steps presentation and discussion
- Meeting Closes.

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