NUCLEAR NEW BUILD – DOES THE UK HAVE THE CAPABILITY AND CAPACITY TO DELIVER ?

MAJOR PROJECTS ASSOCIATION

Highlights from the Major Projects Association event
19th June 2014

Within the next ten years, in order to replace a series of ageing nuclear stations, the UK is expected to make an investment of £60bn in new nuclear power stations. Work on the first new station, EDF's Hinkley Point C, is expected to start this year, and subject to approvals will be followed by Horizon's Wylfa Newydd. In their civil engineering scope alone, each project will be one of the largest and most complex in the UK, comparable to the infrastructure for the London 2012 Games.

The seminar was the opportunity to review how the UK Government and industry are leading the development of the capability and capacity to deliver the new-build programme at a time of growing demand worldwide on the engineering manufacturers, contractors and their suppliers.

In opening the seminar the Chairman commented that two years ago there was strong national consensus on the importance of investment in nuclear power and infrastructure generally, but some lack of confidence in investment due to economic and political uncertainties, plus the shadow of Fukushima. He reviewed how great progress had now been made to establish confidence and support for a fleet of new nuclear power stations – particularly by the formation of the Nuclear Industry Council (NIC), establishing the strategic partnership between government and industry, and the initiatives of the Nuclear Industry Association (NIA) on quality, safety, skills, capability, capacity, best practice and readiness down the supply chains.

SUPPLY OPPORTUNITIES HINKLEY POINT C

- More than £3bn worth of manufacturing contracts are available
- EDF Energy and its delivery partners want to work with UK companies to maximise their share of this opportunity
- There are approximately 180 Tier 1 contracts, which can be split into the following:
  - On-site construction – 113 contracts
  - Equipment items and components – 51 contracts
  - Systems and erection – 36 contracts
  - Mechanical, electrical and HVAC – 13 contracts
  - Technology systems – 6 contracts
  - On-site enabling – 6 contracts
  - Site services, logistics

'The purpose of industrial strategy is to help firms make money.'

A CHANGING WORLD

Past

- Investment by state-owned utilities in a regulated market
- UK design developed by consortia of national manufacturers
- Custom-made reactors: almost every reactor was different; balance of plant all different

Now

- Investment by privately owned multinational utilities in competitive markets
- Utilities choose from international contractors' designs
- Standardisation required to facilitate new build worldwide

'East is moving West. We need to collaborate and operate on an international level.'

GOVERNMENT AND INDUSTRY

Through the *Nuclear Industrial Strategy – The UK's Nuclear Future*, issued by the Department for Business, Innovation & Skills in March 2013, the UK Government and industry have together declared a clear vision for the UK nuclear industry.

The strategy identifies priorities that government and industry will work on together in a long-term partnership. It is focused on delivering more opportunities for the UK nuclear industry to achieve economic growth and creating jobs through an increased share of all aspects of the nuclear market.

What is it?

- Formation of the NIC with the vision to have a competitive vibrant world-class UK nuclear industry that is delivering full nuclear life cycle capabilities both domestically and internationally.
- A cost-reduction initiative to investigate the scope for reducing costs across all aspects of the industry.
- Mechanisms for enhancing business capability and competitiveness.
- The regulatory and legislative environment that has been put in place.

What's new?

- Coordination of R&D and innovation through a strengthened National Nuclear Laboratory (NNL) and Nuclear Innovation and Research Advisory Board (NIRAB).
- Recognising the challenges and capturing opportunities in the home market and providing assistance to help firms penetrate overseas markets.
- Ensuring the UK has the necessary skills for the future.

LEADERSHIP AND COORDINATION

Under the umbrella of the NIC a comprehensive structure has been established to deliver the fleet of new build together with operations and decommissioning that, with others, will be part of an interface and strategic influence with the wider infrastructure investment programme, comprising:

- A Nuclear Supply Chain Action Plan (with the NIA). It is 20 years since the completion of a new nuclear power station in the UK, Sizewell B. The Plan uses experience from decommissioning projects and other recent major projects such as the Olympic Park, making available best practice from around the world and ensuring high standards in the supply chain. The Plan draws on the review work by the Royal Academy of Engineering, Institution of Civil Engineers, NIA, Construction Excellence, the current findings of the Nuclear Construction Best Practice Forum and previous Major Projects Association seminars. All these give us lessons to be learnt. We should make sure we learn them.
- The National Skills Academy for Nuclear, working very closely with both client and supply chain organisations. Over the last six years, employers from across the industry have collaborated on a range of initiatives to address the skills challenges facing the current and future nuclear programme. The results include a nuclear capability model – a 'good practice' approach to training accreditation and nuclear professionalism.
- The UK's Nuclear Industrial Strategy, published in March 2013, setting out the pathway for the UK to once again become one of the 'top-table' nuclear nations in the world. The potential role of R&D in helping to achieve this aim was highlighted. NIRAB and the Nuclear Innovation and Research Office are now the catalysts for complementing the skills requirements and leveraging the opportunities for development and innovation through the NNL and the Nuclear Advanced Manufacturing Research Centre (AMRC). The AMRC exists for only one reason – to help UK manufacturers win work.

more › A new generation of nuclear power stations – are we ready? (Major Projects Association seminar 2006)

EXISTING UK CAPABILITY

Civil engineering and construction

- UK competing successfully internationally
- Common practice to use joint ventures
- UK well-resourced but some up-skilling in quality and safety may be required to people transitioning

Plant equipment and supply

- UK has limited capacity to supply key items of reactor pressure vessels, steam generators, turbine generators, ultra large forgings and reactor coolant pumps
- UK capable of supplying majority of remaining mechanical and electrical equipment

In addition there are several UK companies with expertise in plant and equipment installation and commissioning but great capacity will be required. The UK also has sufficient competence and strength in regulation and decommissioning and is well-resourced in support services such as safety and quality management, regulation and planning.

POINTS FOR FURTHER DISCUSSION:

1. Can the UK be a top nuclear nation without the technology?
2. How can we position new nuclear as a 'go to' career?
3. Should there be a public debate about the economics of energy supply?
4. How can we create a flow of positive surprises and show that the industry can deliver ahead of expectations?

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Seminar chairman:

Lord Hutton of Furness, Chairman, NIA

Speakers:

David Boath, Vice President and Chief Engineer – Clean Energy Europe, AMEC
Richard Coackley, Chairman, Construction Best Practice Forum, NIA
Chris Moore, Director of Strategic Business Development, NNL
Bryan Payne, Head: New and Existing Nuclear Generation Team, DECC
Dominic Scullard, Assistant Director, Civil Nuclear Industrial Policy & Low Carbon Opportunities, BIS
Alan Smith, Senior Site Development Manager, Horizon
Jo Tipa, Operations Director, National Skills Academy for Nuclear
Mike Tynan, Chief Executive, Nuclear Advanced Manufacturing Research Centre
Gareth Wynn, Communications Director, EDF Energy

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