China-UK Partnership May Change Dynamics of Nuclear Development in Europe

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By the time this article is published, an historic development may well have taken place that has the potential to change the dynamics of the world’s nuclear energy industry for generations to come.

I am talking about expectations of a deal that could see the first construction in the West of Chinese-designed nuclear power plants. If the agreement goes ahead, a site adjacent to the closed Bradwell nuclear plant on the east coast of England could eventually be home to Chinese reactor technology.

Electricity generation started at the former twin unit Magnox (magnesium-aluminium non-oxidizing, Magnesium Alloy (cladding material) Graphite Moderated Gas Cooled Uranium Oxide Reactor) nuclear plant at Bradwell in 1962 and ceased in 2002. Bradwell is expected to become the first reactor site in the UK to enter care and maintenance in 2015.

However, as the Magnox reactor technology of the UK’s past slips further into the history books, there is a very real possibility that Chinese president Xi Jinping and British prime minister David Cameron could write a new chapter for the nuclear power industry in both countries.

Whether British and Chinese leaders reach a decision relating to Bradwell this year or not, it seems clear this is a development that will happen – sooner rather than later. Last year, the UK and China signed a statement on civil nuclear cooperation that said Chinese companies could eventually own and operate Chinese-designed nuclear power plants in the UK, subject to “stringent” regulatory requirements.

China and the UK have already ‘cemented’ the foundations to step up joint activities in the nuclear sector. Both countries have agreed to co-fund the launch of a new €69 million “cutting-edge nuclear research centre”, to be headquartered in the UK.

In addition, a regional collaboration agreement has been signed between Western England’s Cumbria region (home to the Sellafield nuclear complex) and China’s Sichuan Province, which the UK government said will “deepen commercial ties between the province and the North West’s world-leading expertise in nuclear decommissioning and waste management”.

China is already lined up as a strategic investor in the French-led consortium to build a European pressurised water reactor plant at Hinkley Point C in the UK’s southwest county of Somerset. Participation in that project appears to have been strengthened by the UK government’s decision in September to give an initial investment guarantee for the project worth around €2.8 billion.

UK Chancellor of the Exchequer (finance minister) George Osborne announced the investment guarantee during a visit to China and said the move was another step forward “for the golden relationship between Britain and China”.

Political observers say that China pushed for this ‘golden relationship’ to be given added lustre by allowing it to build at Bradwell, in return for investment in Hinkley Point C – the UK’s first new nuclear construction project in a generation.

The prize for China would be, of course, being able to showcase its technology to the world from a base in Europe. Bradwell could then be a springboard for Chinese nuclear developments elsewhere. Clearly, the (potential) acceptance of the project by UK nuclear regulators would be an enormous boost if China were to seek additional contracts in Europe and beyond.

China’s rise and rise to prominence on the international nuclear industry stage is astonishing but perhaps not unexpected. Certainly, China is open to industrial partnerships, as nuclear plant construction projects at home involving French and US companies among others shows.

Now China has clearly set its sights on playing a more active role in the nuclear sector overseas.

According to the ‘World Nuclear Power Plants 2015’ report, published by the Japan Atomic Industrial Forum, China’s progress has been based on marketing an indigenous reactor design “developed after absorbing foreign technology”. The report said that of six new nuclear plants commissioned worldwide in 2014, China accounted for five of the projects.

Earlier this year, China’s national legislature adopted plans to encourage domestic companies to take part in “overseas infrastructure development projects and engage in cooperation with their foreign counterparts in building up production capacity”. The report said the government would also work to increase China’s international market share in sectors such as electric power.

However, the first construction in the West of a Chinese nuclear plant would represent a landmark achievement to say the least. The way ahead will not be smooth – it never is! Already, one union leader in the UK has raised fears of Chinese labour and components being used to build a Chinese reactor, which would “constitute economic madness and raises serious safety issues”.

Ministers and UK nuclear industry leaders will need to promote the ‘bigger picture’ of what the project would mean in terms of energy security, local jobs and the benefits to supply chain companies. They will, should the Bradwell project be sanctioned, also need to be quick to deal with public concerns that will undoubtedly arise over deployment of what might be termed ‘unfamiliar’ technology on the UK’s shores.

The UK’s highly-respected regulatory regime will clearly have a key role to play in reassuring the public but, even in a largely ‘nuclear friendly’ nation, perceptions are everything. China understands this too and is keen to promote its safety credentials. The State Council suspended the approvals process for building new nuclear power plants in China in the aftermath of the 2011 Fukushima-Daiichi nuclear accident in Japan. The order was not lifted until 2013.

In an interview with the International Atomic Energy Agency last year, China’s minister counsellor and alternate to the resident representative at the Chinese permanent mission said: “If I am walking with two other men, each of them will serve as my teacher. I will pick out the good points of the one and imitate them and the bad points of the other and correct them in myself.”

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