

China's pause for thought



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"Fukushima made a huge impact on China's nuclear industry," Yun Zhou, a special consultant of Ux Consulting and research fellow at Harvard University, told the WNA Symposium. The country will rethink regulation before returning to full-speed nuclear build.

As a major growing global power, China has a nuclear power program to match. With 14 reactors in operation, it currently has almost twice this number under construction and might still approach 60-70 GWe nuclear capacity in operation by 2020, despite the effects of the Fukushima accident.

Uniquely, the country has been able to take advantage of today's well developed nuclear industry, including highly experienced suppliers, robust international standards of nuclear and radiation safety, and the sharing of operational experience by the World Association of Nuclear Operators. Most of the world's major nuclear countries formed their own nuclear industries without these benefits.



Yun Zhou at the WNA Symposium

Nevertheless, any country's regulatory system remains an entirely sovereign responsibility and the Fukushima accident made Chinese leaders re-assess the suitability and capability of theirs - in the context of having already planned and approved more new reactors than had been expected.

New build

Speaking at the WNA Symposium today, Zhou noted that China has been the only country to halt new reactor approvals. During this pause, the country has re-assessed the safety of its planned and approved Generation-II reactor projects. New safety standards are being drawn up at the same time as a draft of an Atomic Energy Law, which might emerge at the end of this year.

While the safety assessments conducted after the Fukushima accident have had no detrimental effect on any of the projects under construction, the implications of the new standards remain to be seen. Meanwhile, China's attitude to public safety has evolved in a more risk-averse direction following some incidents of public unrest and accidents in the last year - notably the high-speed train accident. It is highly likely that communities will have more involvement in new nuclear siting decisions.

Zhou presented three scenarios by UxC for Chinese nuclear development - all returning to the same phenomenal rate of build, but offset by different periods of reflection and reorganisation.

Regulatory changes

The size, budget and capability of the Chinese regulatory system should grow dramatically. It is currently overseen by a staff of 30-40 at the National Nuclear Safety Administration, with support from the Nuclear and Radiation Safety Centre's 200 technical experts. Inspection of power plants and equipment suppliers, as well as radiation monitoring, is undertaken by six regional centres.

This set-up runs on a budget that is a tiny fraction of parallel regimes in other countries - and some budgetary areas have not been growing at the same speed as reactor build, said Zhou.

Overall, she considered the system "on a par with global standards." But while there exists the proper strong safety culture, led from the top of the regime, there is a "lack of experience and technical capability to identify the technical issues," which has manifested itself in some construction delays.

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