# Policy Forum 11-13: Japan’s Nuclear Crisis Sparks Concerns over Nuclear Power in China


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# Japan's Nuclear Crisis Sparks Concerns over Nuclear Power in China

By Wen Bo

June 2, 2011

Nautilus invites your contributions to this forum, including any responses to this report.

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I. Introduction

Students in Dalian hold a candlelight vigil commemorating the 25th anniversary of the Chernobyl accident.

Wen Bo, Senior Fellow at Pacific Environment's China Program, writes, “[The Fukushima accident] was a rare opportunity for the Chinese media to cover nuclear issues and address concerns over nuclear power and its related hazards and risks. Though some nuclear specialists, indeed most of them, are supportive of nuclear power, mounting concern amongst the general public has emerged, making it clear that many would rather not have nuclear power at all. Other scholars indicated this is a golden opportunity to increase knowledge amongst the public on nuclear radiation and safety measures."

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II. Article by Wen Bo

-“Japan's Nuclear Crisis Sparks Concerns over Nuclear Power in China”
By Wen Bo

Chinese Premier Wen Jiabao knows that Japan is a neighbor China cannot ignore. Wen was quick to offer assistance to Japan for its efforts to deal with the March 11 earthquake and tsunami in Japan and visited Fukushima in late May.

Unlike previous Chinese leader Jiang Zemin, who had little interest in forming a strong bilateral relationship with Japan and focused on US-China relations instead of Sino-Japanese ties, the current leadership in China knows Japan is a country on which the Chinese economy still heavily relies. This is partially due to the fact that both President Hu Jintao and Primer Wen Jiabao had worked in the Chinese Communist Youth league when they were young. The League has been traditionally involved

in numerous China-Japan youth exchanges since the 1980s.
Both Hu and Wen know what modern Japan is like. Interestingly, many ordinary Chinese people have an impression of Japan which is far different from what Japan is today, as many still cannot get away from the legacy of WWII when Japan invaded China.
Given this historical background, the Fukushima nuclear crisis had a mixed impact inside China. While some believe Japan was punished both by nature and technology, the majority of people have started to have a different opinion about Japan. They witnessed the civilized response of ordinary Japanese citizens in the face of a major crisis. It was also the first time that Japanese self-defense troops were featured on Chinese TV channels as a force engaging in rescue and humanitarian efforts, similar to what they see about China's forces.
Japan had been a desirable country for many young Chinese people to pursue their studies or to find a job. But this has started to change due to the nuclear crisis.
Undoubtedly, the Fukushima nuclear crisis has had an enormous impact on China. Given its geographical proximity to Japan and the large Chinese population living and working in Japan, the Chinese government and a great many Chinese citizens have been keeping a close watch on the unfolding events.
On March 16th the Chinese government held a high level State Council meeting to discuss the Japanese nuclear crisis and to consider China's own nuclear planning. At the meeting the government made three major decisions on nuclear power. First, the government decided to halt its plan to build new nuclear power plants. Second, it ordered a re-examination of the safety risks of the nuclear power stations currently under construction. Any safety faults discovered would lead to construction being stopped. Third, a decision was made to enhance the management of the safety measures in nuclear power stations currently in operation in China.
In a rare stand, the Chinese government indicated that the utmost priority should be given to nuclear safety. China will also step up its process of drafting nuclear safety planning and adjust its middle and long-term nuclear development plans. Any new nuclear power plant construction will be shelved, including preliminary work.

**The Nuclear Crisis Unfolds**

The Fukushima nuclear crisis was an unprecedented moment in the modern history of China. The first Chinese nuclear reactor started operation in 1991, after the Chernobyl nuclear accident in 1986 and the Three Mile Island meltdown in 1979. These infamous accidents occurred before China operated its own nuclear power plants and when China was largely cut off from the international community and news was less timely. Therefore, since the nuclear industry took root in China, it has not experienced a crisis like the Fukushima accident.
Also, given its geographic proximity, the Chinese government and the public have kept a close watch on the development of the crisis in Japan. In late March, major cities in China experienced a rush to buy salt as people believed it could prevent the harmful impacts of nuclear radiation. The panic among the public was widespread. Apparently, the psychological effect of the Fukushima nuclear accident could be more serious than its actual damage.

**Chinese Governmental Responses**

As both Japan and China are aware, there is still a long way to go to address the danger and impact of radiation from the Fukushima meltdown. While China is facing many social, economic and environmental challenges of its own, the Chinese government understands that outside events—such as the Arab Spring revolutions or the nuclear crisis in Japan—could spark instability in Chinese society.
Therefore, the Chinese government has repeatedly assured the Chinese public that the radiation from the Fukushima nuclear accident could not have an impact on China and that China's nuclear facilities are all safe and better managed then those in Japan. China also indicated it embraced nuclear power when the technology had developed in other countries for decades, therefore, China’s own nuclear power plants were established with advanced levels of technology.
The Fukushima accident has provided China with a window of opportunity to better understand the

complexity of nuclear-power technology, as well as its potential effects.
China's first domestic nuclear power reactor was officially connected to the grid in 1991. Now 11 nuclear-power plants are connected to the grid. The 20 or so nuclear power plants that are currently being built in China account for 40% of the total amount of the reactors under construction worldwide.
China's nuclear safety standards are enforced by the National Nuclear Security Bureau of the Ministry of Environmental Protection and are required to adhere to the requirements of the International Atomic Energy Agency (IAEA).
However, Wang Yuqing, a Member of the Chinese People's Political Consultative Conference (CPPCC) and the former Vice-Minister of the Ministry of Environmental Protection, kept reminding the public of the importance of proper supervision during China's nuclear-power development. "The training of supervision staff members cannot be completed in a short time," he said. In reality, nuclear-power stations do not always comply with state standards and misconduct in procedures are not uncommon in almost every industrial sector. It would be unrealistic to think China's nuclear sector is totally immune.
Chinese local governments still have a strong desire for nuclear power, even though they are aware of the seriousness of the Fukushima crisis. The desired investment generated by the new plant construction overshadows the concerns over long-term nuclear safety, costs for maintenance and future decommissioning costs. More electricity is also essential to attract production lines and other energy intensive industries.
Due to this craze for nuclear power, geographic risks have been ignored during the preliminary safety assessments. For example, Hongyanhe nuclear power plant in Liaoning province is being built on an earthquake fault line in eastern China and around a new development zone which has been severely polluted by sea water and oil leaks from shipping vessels.
China's State Council conveyed at a state meeting on March 26th a decision to halt rampant nuclear growth, but the prospect of slowing down the entire sector is not good. At best this measure would halt the development of some inland nuclear power plants which are challenged by water shortages. The recent drought that occurred in April and May in Southern China again demonstrated the dangers of inland nuclear power plants. Nuclear power plants built inland generally use river water for cooling and nuclear accidents may lead to the pollution of water supplies to regions with dense populations.
Besides, China has not started to look at the costs of decommissioning, as none of its nuclear reactors has reached this stage in their life-span. While the promoters of nuclear power tend to downplay these costs, they will eventually have to be paid by the government, and thus tax payers, rather than by the nuclear company who benefitted from the development of the nuclear plant.

**Chinese Media Frenzy**

Since this nuclear crisis was in Japan, Chinese media were allowed to report on the event freely. This was a rare opportunity for the Chinese media to cover nuclear issues and address concerns over nuclear power and its related hazards and risks. Though some nuclear specialists, indeed most of them, are supportive of nuclear power, mounting concern amongst the general public has emerged, making it clear that many would rather not have nuclear power at all. Other scholars indicated this is a golden opportunity to increase knowledge amongst the public on nuclear radiation and safety measures.
The Chinese language newspaper Southern Metropolitan Daily also published a map outlining names and locations of all proposed Chinese nuclear plants, plants under construction, and those already in operation. This is the first publicly released information on China's nuclear industry and planning. For the first time the Chinese public is aware that many of these new nuclear plants are being built and where. These revelations will surely generate a huge outcry and opposition from the public.
Caijing magazine also published a special edition on China's nuclear development and reexamined China's nuclear policies and management challenges. Numerous other newspapers and journals ran articles on China's nuclear power, and such media frenzy is extremely rare in China. But such hot

debates did not last long as the Chinese government quickly suppressed criticism of China's nuclear plan and concern over China's various nuclear faculties.

**Examining China's Nuclear Waste Issues**

Media interest in nuclear issues during this period also exposed the Chinese nuclear waste treatment plan. A multi-billion dollar nuclear waste recycle plan in Gansu has now been revealed to the Chinese public.

In 2009, the Chinese nuclear power sector witnessed South Korea's successful bid to build four nuclear reactors in the United Arab Emirates. The news inspired the Chinese nuclear sector, who saw the potential for joining China's “go-out policy” encouraging exports.

In the Jiayuguan, the China National Nuclear Corporation’s (CNNC) spent nuclear fuel reprocessing facility has set up its office building. The uranium-recycling project is likely to be worth some US$30 billion. In November 2010, CNNC and French firm Areva signed an agreement to build a plant capable of handling 800 tones of spent fuel. More precisely, Jinta country, north of the Jiayuguan city, is the site for the reprocessing plant and local officials have high hopes for economic gain from this project.

Initially, the French nuclear giant intended the facility to be a processing center for the whole of Asia. This means that the nuclear waste from abroad would also be reprocessed there. Concern grew that the facility might not have the technological capacity to reprocess it all and instead become a storage site for nuclear waste. . Southern China Weekend interviewed Shao Mingchang, the head of the nuclear fuel office of China’s Ministry of Environmental Protection, on the matter. He explained that "reprocessing of spent fuel is extremely expensive."

Despite the controversy over dealing with the nuclear waste produced within China, the project appears to be forging ahead—largely thanks to the support of CNNC, which controls every aspect of China’s nuclear sector. Professor Qian Jihui, honorary president of the Nuclear Power Institute of China and former Deputy Director General for Technical Cooperation at the IAEA, admitted: “CNNC gets a big order, paid for by the government, and boosts the reprocessing industry—it’s a very good deal for them.”

**The Rivalry Between Hydro-Power and Nuclear Energy**

While most power companies are state-owned, debates on nuclear power exist within the Chinese government. Hydropower lobbyists have criticized the Chinese nuclear power sector as "falling into a trap of American nuclear sales". They were quick to use the Fukushima crisis as new reason for more state investment and favorable policies in the hydropower sector.

This controversy escalated after the Fukushima nuclear crisis, and hydro-power advocates have suggested that China has sufficient hydro-electrical technology to deploy domestically and could even export its business overseas. Proponents of hydropower in China openly criticized the Chinese nuclear sector as embracing US and French interests and helping these Western companies to sell their nuclear equipment. Nuclear advocates, however, described nuclear power as a clean energy that generates less of an ecological threat than hydro-power and does not require the relocation of local residents.

In the week of March 26th, the stock market in China saw a 20% drop in stock price for the nuclear power sector and a steady gain for other renewable energies companies such as wind and solar energy, as well as hydro-power.

While investment in nuclear construction is high, local governments in China are strong advocates for their nuclear power projects and often use tactics to increase the price of these projects—by asking for more funds, either bank loans or governmental investments, and by forcing the government to approve their nuclear plans by threatening the loss of initial investment.

**Hong Kong's Response**

Hong Kong started to receive nuclear power in 1994 and now almost a quarter of its electricity is generated by nuclear sources. Much of China's nuclear reactors and future growth is also concentrated in Guangdong. The NGO Civil Exchange has engaged in activities to raise "nuclear

literacy" in Hong Kong and also help civil society there discuss and debate the issues surrounding nuclear energy as a part of Hong Kong's current fuel mix. Topics such as "how would a major nuclear incident be handled in Hong Kong?" have been raised.

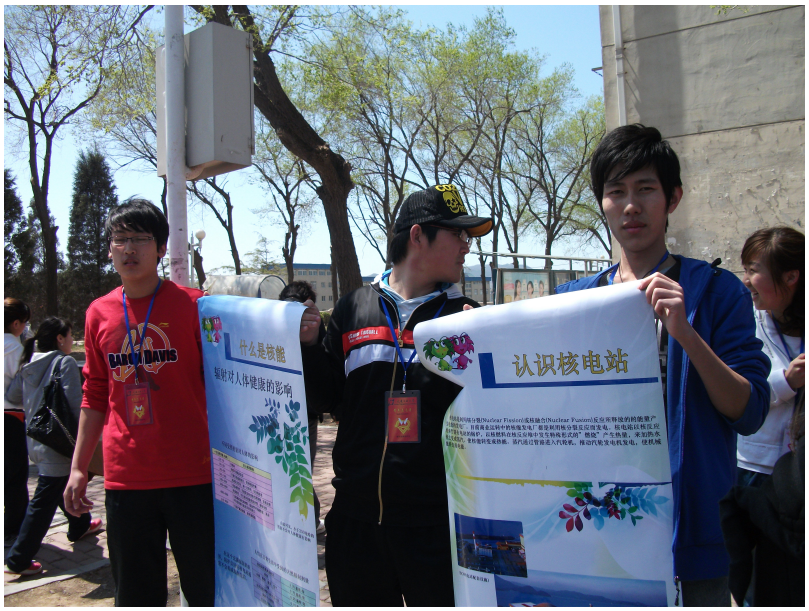
**Chinese NGO Response**

The Chinese environmental group Green Earth Volunteers organized a journalist salon which included a briefing from a nuclear safety official Zhao Yamin on China's nuclear development on March 16th, 2011. The event drew a large audience. Many journalists and attendants raised sharp questions over China's nuclear power plan and safety measures.

One journalist pointed out that the shortage of skilled professionals is posing a nuclear threat to China, as more time is needed to allow the growth of the nuclear profession in China. He said that the explosions at Three Mile Island in the United States in 1979 and at Chernobyl in the former Soviet Union in 1986 were caused by human errors. In particular, the accident at Chernobyl in former Soviet Union is a typical example of errors in human operation and bureaucratic command. In response to a question about how China will resolve water issues for nuclear plants built inland, Zhao answered that those reactors built on the coast use a “once-through” cooling system, while those built inland use cooling water that comes from secondary circulation and an emergency reservoir of 2,000 to 3,000 cubic meters.

On March 25th, the Heinrich Böll Foundation organized a seminar in Beijing, aimed at briefing Chinese journalists on nuclear safety issues.

On April 26th, on the 25th year anniversary of the Chernobyl disaster, a local NGO named Blue Dalian organized nuclear awareness activities at different campuses in Dalian and an evening candle-light vigil to commemorate the tragedy. The activities drew official attention from the Liaoning provincial government and subsequently a number of students participating in the activities were interrogated by their respective university authorities on their motivations and social links.




Students in Dalian raise awareness about the dangers of nuclear power on the 25th Anniversary of the Chernobyl accident.

Chinese netizens have also been active in highlighting the potential risks of nuclear power plants planned or under construction. For example, netizens in Dalian discovered that the Hongyanhe nuclear power plant in Liaoning province was built on the Tan-Lu fault line. Such facts have not been mentioned before in official documents or in the public media.

**What Will Be Next?**

China is unlikely to abandon its nuclear power strategy, but it might slow down the process of building inland nuclear reactors. The current drought in southern China demonstrates that inland nuclear power plants are less realistic due to the lack of water. The high population density in these areas is another unfavorable factor.
The Chinese government has also been quick to crackdown on any small indications of opposition which might lead to an anti-nuclear campaign, as shown by its over-reaction to the Dalian students' efforts to raise nuclear awareness.
Friends of Nature's Executive Director Li Bo toured German nuclear waste storage sites in May under the invitation of a German institution. Simmennpuu Foundation in Finland also expressed interest in hosting two Chinese visitors to look at Finland's nuclear sector and better understand the potential risk of nuclear power.
Given the increased interactions between Chinese civil society groups and their international counterparts, Chinese groups are likely to carefully watch nuclear development in China, but will do so under the radar.
Japan is still struggling to solve its current nuclear crisis and debating the country's future nuclear policy, the results will inevitably have an impact on China's own nuclear plans.

III. Nautilus invites your responses

The Northeast Asia Peace and Security Network invites your responses to this essay. Please send responses to: bscott@nautilus.org. Responses will be considered for redistribution to the network only if they include the author's name, affiliation, and explicit consent.

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