

China and Nuclear Proliferation: Rethinking the Link

By

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Testimony before the U.S.-China Economic and Security Review Commission
"China's Proliferation Practices, and the Development of its Cyber and Space Warfare
Capabilities,"

May 20, 2008
Room 562,
Dirksen Senate Office Building
Washington D.C.

It would be nice if nuclear proliferators went out of their way to violate U.S. and international proliferation restrictions. Unfortunately, they are smarter than that. China, for example, no longer offers nuclear-capable M-9 missiles to countries like Syria. That would trigger U.S. missile nonproliferation sanctions. On the other hand, Chinese front companies recently funneled North Korean-purchased dual use nuclear goods to the Syrian reactor project. That is far harder to track and almost certain to go unsanctioned. Should we reduce our efforts to monitor such transactions? Hardly. But if we want to assure that we are doing all we can to reduce further Chinese-induced proliferation, we will need to track additional trends.

Besides increasingly covert and indirect strategic technology transfers to Pakistan or Iran, we now need also to worry about how Beijing might divide us from our closest Asian security allies—Japan, Taiwan, and South Korea -- governments that have so far skipped going nuclear or ballistic. In addition, what choices China makes to expand its civilian domestic and export nuclear programs will have a major impact on how much more nuclear weapons-capable Pakistan, Iran, Saudi Arabia and other Middle Eastern states become. Finally, whether and how China decides to increase its own nuclear weapons deployments will directly influence the weapons ambitions, not only of Beijing's East Asian neighbors, but of India, Pakistan, Russia, France, the U.K., and the U.S.

More and more, it will be these broader developments, rather than illicit Chinese transfers alone, that we will need to watch and shape. To address them, our government should make several adjustments to current. Policy in order to encourage China to (1) cap its further production of nuclear weapons-usable fuels; (2) pursue nuclear export projects only if they are unambiguously profitable, and (3) discourage any further state-backed transfers of nuclear weapons or nuclear-capable missiles to any other states' soil in peacetime. The analysis below makes clear why.

East Asia and the Pacific

In East Asia and the Pacific, China's nuclear policy decisions could easily push the entire region into a round of nuclear competitions. Is China manipulating the Six-Party negotiations to strain U.S.-Japanese and U.S.-South Korean relations? Is China making "progress" in disabling North Korean nuclear capabilities contingent upon Washington having to downplay unresolved North Korean kidnappings of Japanese citizens, Pyongyang's drug dealing to Japan's youth, and other profoundly provocative, illicit North Korean activities in Japan? Are we siding with China and against Japan's private counsel too much in glossing over the challenges of verifying North Korea's nuclear holdings and activities? Are there other actions that China might take or is taking that could prompt Japan to question Washington's commitment to guaranteeing Japan's security? What is Japan's assessment of the threats posed by North Korea and China nuclear weapons systems? Do Tokyo's assessments here explain in any way Japan's continued pursuit of its own uneconomical space-launch and nuclear fuel-making programs? How upsetting to Tokyo are Chinese naval operation in the Sea of Japan?

What do the Japanese privately make of Beijing's continued bullying and military hectoring of Taiwan—a territory that sits athwart Japan's most vital sea lane of communication with South East Asia and the Persian Gulf?

South Korea is another close U.S. security ally. Like Taiwan, South Korea has previously questioned the reliability of U.S. security assurances and has been caught attempting to acquire nuclear weapons more than once. South Korea is developing its own space launch vehicle, which could be converted to deliver nuclear weapons and Taiwan has developed long-range surface to surface cruise missile that can easily reach targets in China. South Korea has also again announced its desire to recycle spent nuclear fuel for "civilian purposes" and has secured U.S. Department of Energy assistance to launch a pyroprocessing program. Seoul has done so even though producing plutonium-based commercial reactor fuels could bring South Korea to the brink of acquiring bombs and is far more expensive than using fresh uranium fuel in existing light water power reactors. China surely is not eager to see either South Korea or Taiwan go nuclear or ballistic. On the other hand, China would hardly object if Seoul freed itself of U.S. influence and troops. Might Beijing prefer a South Korea confederated with Pyongyang—even though this might result in a nuclear-armed Korean confederation—over a Korea unified with U.S. troops still present? In this case, wouldn't Chinese efforts to strengthen trade and diplomatic relations with Seoul make sense even if or especially if they came at the expense of Seoul being able to maintain good relations with Japan or the U.S.? As for Taiwan, are there clear limits of how far China might go to intimidate and isolate Taiwan from the U.S. and Japan?

In the next 10 to 15 years, the answers to these questions could induce Japan, South Korea or Taiwan to go nuclear or ballistic. If any of these states further hedges their bets by edging toward nuclear weapons, this, in turn, would likely pressure Australia (a country that had its own bomb program as late as 1969), Indonesia (a nation that has repeatedly vowed to keep up with its neighbors on the nuclear front), and Vietnam (a "civilian" nuclear power aspirant) to develop nuclear weapons options of their own. Each might not get the bomb overtly, but, like Iran, bring themselves to the brink through "peaceful" nuclear activities.

Of course, how far China expands and modernize its own nuclear weapons arsenal will also weigh heavily on how much nuclear hedging its neighbors choose to pursue. Will China continue to modernize its nuclear weapons systems incrementally and maintain the current number of systems it now deploys? Or will it, instead, ramp up its efforts on either or both fronts so as to prompt its non-nuclear neighbors and Russia, the U.S., India, Pakistan, France and the U.K to react with nuclear hedge actions of their own? These questions are hardly far fetched: Just last week, President Hu tried to reassure Japan that China did not wish to start an arms race in the region. Implicit to his announcement was the threat that China might yet feel compelled to do so.

South Asia and the Middle East

No country has lent as much nuclear-capable missile and nuclear weapons-related assistance collectively to Pakistan, Saudi Arabia, and Iran as China. Just last year, China also extended offers of civilian nuclear cooperation with Egypt and India. Recently, there were reports that Chinese front companies were helping to forward nuclear goods to Syria. Dual-use Chinese nuclear technical assistance and space launch vehicle assistance (*vice* transfers of entire missile systems, nuclear weapons fuel, or complete bomb designs) are likely to continue to several of these states in ways that will be challenging for the U.S. to detect or sanction.

Here, Pakistan leads the list. Last year, the military-dominated government under Musharraf announced it would respond to India's expansion of its nuclear program with a 20-fold expansion of Pakistan's own fledgling nuclear power program. The key to this expansion will be Pakistan's imports of Chinese-designed pressurized heavy water reactors—systems that could be easily adapted to produce nuclear weapons-usable plutonium. As for the expansion of Pakistan's nuclear weapons production efforts, China has already helped with Pakistan's production of plutonium and weapons-grade uranium as well as lending Islamabad long-range missile assistance.

Two years ago, China also offered to help India expand its “peaceful” nuclear energy program—a program that Pakistani military officials fear might only bolster India's military nuclear weapons production capabilities. How well Beijing balances its nuclear offers to Pakistan and India will play a major role in determining when and if a major nuclear competition is again set off between New Delhi and Islamabad. On the one hand, China's bilateral trade with India is quite large (on par with U.S.-Indian trade) and Beijing would like to expand its trade relations with New Delhi. This would suggest that it is hardly in China's interest to antagonize India or to encourage New Delhi to compete with China militarily. On the other hand, China has long had a special security relationship with Islamabad and Riyadh.

This special relationship has resulted in some of the region's most significant strategic weapons transfers. Since the early 1980s, Beijing has given Pakistan nuclear-capable missiles, nuclear weapons materials and fuel-making technologies, and even a tested nuclear bomb design. In 1988, China sold Saudi Arabia 36 medium-range CCS-2 rockets that Beijing had previously deployed as nuclear weapons delivery systems along with technicians to maintain these rockets. It has been rumored China may also have offered to forward Riyadh nuclear warheads to arm these rockets if Saudi Arabia was ever sufficiently threatened. Saudi Arabia, meanwhile, helped bankroll Pakistan's nuclear weapons program. In 2003, it was reported that Saudi Arabia was studying its options to acquire nuclear weapons and that one of these options was to seek to acquire or lease them from another country. China could encourage Pakistan to do this or Beijing might transfer warheads itself. As long as Pakistan or China maintained “control” over these devices, neither they nor Saudi Arabia would be in technical violation of the NPT.

Pakistani demand for continued Chinese nuclear assistance also remains high, as does its military's motives to cooperate strategically with Saudi Arabia. Recently, Pakistan's military has privately voiced concerns about U.S. abandonment (or betrayal), New Delhi's possible ramp-up of nuclear weapons production, and Indian "encirclement" (*i.e.*, Indian construction of naval facilities at the mouth of the Strait of Hormuz in Iran, Indian construction of roads from this port in Iran to Afghanistan, Indian support of Baluchistani irredentist movements, India's increasing assistance to Afghanistan, etc.). All of these concerns could encourage Pakistan's military to seek strategic depth by establishing stronger security relations with Saudi Arabia. What China does to support or discourage Pakistan in this regard could easily determine if Saudi Arabia becomes a host of foreign nuclear arms.

Meanwhile, China must also balance its relations between Saudi Arabia and the Gulf Coordinating Council neighbors on the one hand, and Iran on the other. Riyadh has heavily invested financially in commercial enterprises in China, but is having difficulty getting proper return on its investment. Saudi Arabia, as a result, has little interest in doing anything to aggravate its relations with Beijing. China, on the other hand, has invested heavily in Iranian enterprises that are not yet producing clear profits for Beijing. It is hardly surprising, then, that China wishes to maintain good relations with all of the oil-producing Gulf States. However, the current set of financial relations between China, Saudi Arabia and Iran will encourage China to do what it can to increase its influence and leverage over Iran and to protect Iran against other states that might sanction or limit Tehran's ability to make money.

This inclination is likely to dampen Beijing's willingness to discipline Iranian nuclear misbehavior. It clearly is not in China's interest to be seen breaking nonproliferation rules toward any state, much less Iran—a state that is currently in violation of its International Atomic Energy Agency (IAEA) safeguards obligations under the Nuclear Nonproliferation Treaty (NPT). But if there are relatively inexpensive ways to make Iran dependent upon Chinese strategic technology assistance, ways that do not clearly break the relevant international rules—*e.g.*, the strictures of the NPT, Nuclear Supplier Group guidelines, IAEA safeguards requirements, or Missile Technology Control Regime principles—China will have an interest in pursuing them.

Having suffered trade sanctions following the events of Tiananmen Square, China is also naturally disinclined to join others in imposing trade sanctions against any country. This is doubly so in Iran's case for the financial reasons noted above. At the same time, China is not eager to isolate itself: It will support modest sanctions against Iran, but it will be unlikely, however, to get ahead of Moscow and it will generally do what it can first to soften or delay sanctions against Tehran. What's worrisome here is that this has only encourage Tehran to believe that it can continue to defy United Nations resolutions calling on Iran to suspend nuclear fuel-making—activities which can bring Iran within days or weeks of acquiring bombs—without paying a high price economically or diplomatically.

Finally, China is beginning to compete for civilian nuclear influence in the Middle East with the United States, Russia, and France. China's last major, joint nuclear venture in the region was a secret, 15 MWe pressurized heavy water reactor project it built for Algeria in the 1980s. It was discovered accidentally by U.S. spy satellites in early 1991. The Algerian reactor was encircled with air defenses and there was reason to worry that it was part of a covert Algerian bomb project. The reactor has since been placed under IAEA nuclear inspections.

More recently, China, like the U.S. and France, has offered to assist Egypt in the development of large power and desalinization plants. Egypt, which subsidizes the use of its own domestic natural gas, claims it needs nuclear power as a hedge for running low on this fossil fuel. China could export its own older pressurized heavy water reactors or it might work to develop a more modern machine that might incorporate French or U.S.-origin technologies. In either case, these reactors would produce scores of bombs-worth of weapons-usable plutonium.

In the 1980s, Egypt conducted covert missile and chemical weapons programs in clear violation of its pledges to the U.S. and others to steer clear of such activities. Cairo pursued these program to "counterbalance" Israeli military capabilities and in hope of establishing Egypt as a Pan-Arab military leader. If Iran continues its march towards development of nuclear weapons option, many proliferation analysts fear Egypt will find developing its own nuclear weapons option hard to resist even if it has publicly pledged to do otherwise.

The Future of China's Nuclear Program

As already noted, it is unclear if China is intent on ramping up its nuclear weapons program or not. It is investing more to modernize its nuclear weapons systems and is modernizing every branch of its strategic nuclear forces. So far, however, China has seems not to have dramatically increased the numbers of weapons it deploys. What's worrisome is that China is positioning itself technologically and logistically so it can ramp up its strategic weapons deployments rapidly if it chose to do so. China now has between 200 and 400 nuclear weapons, and is also stockpiling as much as 20 metric tons of highly enriched uranium and 4 metric tons of separated plutonium in its military stockpile. This is enough material conservatively to make one to two thousand additional advanced nuclear weapons.

By way of comparison, Japan has 6 metric tons of separated plutonium stored in-country (*i.e.*, enough to make at least 1,200 crude fission bombs) and another 38 metric tons of separated plutonium stored outside of Japan (*i.e.*, enough to make at least an additional 7,600 crude fission bombs). Japan also has just begun operating a large commercial scale plutonium reprocessing plant capable of producing as much as 5 metric tons of plutonium annually (*i.e.*, enough for an additional 1,000 nuclear weapons per year).¹

1. In 2002, Japan's Labor Party chief, Ichiro Ozawa suggested in 2002 that Japan could use its commercial plutonium to make thousands of nuclear weapons if China became too unruly.

It is worth noting that Japan has paid a high premium to reprocess this material. Their latest commercial reprocessing plant cost over \$20 billion dollars. Some of the plutonium produced is used as mixed oxide (MOX) fuel to fuel Japanese power reactors, but it too comes at a premium (MOX fuel costs 2 to 3 times as much as using lightly enriched uranium). It is estimated that Japan's commercial plutonium effort adds between 2 and 3 cents per kilowatt hour to the cost of its nuclear electricity. If it wanted to assure nuclear energy security, Japan could buy a 50-year supply of lightly enriched uranium and stockpile it for a fraction of what it is costing it to pursue its plutonium reactor fuel program. The program, in short, makes little economic sense.

Unfortunately, China is planning to emulate Japan. It's intent not only on bringing roughly as many reactors on line by 2020 as Japan currently has operating, but on reprocessing spent fuel, fabricating and using MOX in its light water reactors, and operating breeder reactors using plutonium fuels. China started operation of its first pilot reprocessing plant in 2006 and expects it to become fully operation later this year. It also hopes to bring its first experimental breeder on line this year. Beijing is expected to decide sometime this year whether or not to invest over \$22 billion to have Areva of France build it a large commercial-sized reprocessing plant and MOX fabrication facility. This reprocessing plant would be roughly similar in size and capacity to what Japan currently has operating.

Implications for U.S. Policy

As noted at the outset, each of these broader set of questions regarding China's nuclear policies recommends adjustments to current U.S. policy.

First, we need to encourage China to cap its further production of nuclear weapons-usable fuels. Our current policies are nearly doing the reverse. On the one hand, our Department of Energy is actively promoting uneconomical commercial spent fuel recycling projects and the use of near-nuclear weapons-usable plutonium-based reactor fuels domestically, as well as in Japan, South Korea and Russia. Our U.S. State Department, meanwhile, is doing little to pressure China to announce that it will no longer produce fissile materials for military purposes even though the other permanent members of the United Nations Security Council already have. The indirect, compound effect of these two U.S. policies is to foster the continued growth of a nuclear powder keg of plutonium in the Far East, one that is sure to have negative knock-on effects on India's and Pakistan's nuclear weapons aspirations. It would be preferable for China to announce that it will suspend any further production of fissionable materials for military purposes and it will shelve its immediate commercial plans to produce plutonium-based fuels. This, in turn, could be used to pressure Pakistan and India to swear off making fissile material for military purposes as well. To leverage such results, Washington might suggest that Japan simultaneously suspend its own uneconomical production of

plutonium-based reactor fuels and defer all U.S. government-funded efforts to so domestically, jointly with Russia, and bilaterally with South Korea.

Second, we should encourage China only to push nuclear projects that are unambiguously profitable. The U.S. itself continues to pile on more and more nuclear-specific government-backed guarantees and subsidies for domestic and foreign reactor-related projects that private banks would otherwise not finance or support. Most other nations, including China, have gone even further in backing domestic and export nuclear projects, including very dangerous ones in Pakistan and potentially worrisome ones in the Middle East. This is an increasingly risky business, one that is at odds with everyone's long-term security and economic interests. Spending extra to accelerate this trade is a mistake. At a minimum, we should be much more candid in identifying the full costs of energy subsidies generally and of nuclear-specific subsidies in particular. As the U.S. works with other states to develop the follow-on to the Kyoto Protocol, it would be helpful to encourage all states to include these and all other costs in comparing different energy options and to allow open international bidding among alternatives to meet any given set of energy and environmental requirements. These principles are articulated in the Charter Energy Treaty and the Global Charter for Sustainable Energy Development. The U.S. claims that it supports the principles in both of these agreements. Still, they are not currently enforced. Washington should work with other states to change this. Certainly, the U.S. should discourage China and nuclear power system providers generally from building or exporting any nuclear projects that are more expensive and less profitable than their nonnuclear alternatives, especially since such projects are frequently among the most dangerous, and yet are now being considered in energy-rich states in the Middle East.

Finally, henceforth the U.S. should discourage state transfers of nuclear weapons to other states' soil in peacetime. It would be helpful not only for China and Pakistan to do so (e.g., in Saudi Arabia), but to get Washington, Moscow, London and Paris to make similar political "no deployment" announcements. Here, the U.S. might announce its intent to make no net additional deployments to NATO and announce its willingness to reduce existing forward deployments if Russia agrees to do likewise. With the possible exception of forward-deployed weapons in Turkey, most U.S. tactical nuclear weapons in Europe no longer serve much operational purpose. They were deployed when the U.S. lacked accurate ballistic missiles, bombers and cruise missiles. So long as we hold on to enough of these long-range systems, it will make more sense militarily to rely less on our forward-deployed weapons.

All of these policy adjustments should be taken in addition to being vigilant of Chinese violations of U.S. and international nuclear export control laws. Certainly, if we fail to make them, China will keep pressing its own nuclear policies domestically, in East Asia and in the Middle East, in a manner that will come in direct collision with our security interests and that of our allies. Fortunately, none of these adjustments entails much risk. All of them can be begun and even be completed without negotiating new treaties. Each also would save millions to billions of dollars in government spending. Finally, in every case, they would make us safer.