



## **A Criteria-Based Approach to Nuclear Cooperation With Pakistan**     June 22, 2011

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### **Summary**

In the wake of the Fukushima nuclear disaster, Beijing decided to review its plans for expanding nuclear power in China. It appears likely that China will shift its ambitious nuclear construction program away from older designs to modern technology provided by foreign vendors.

Although there are no indications that China is reconsidering its decision to build two additional nuclear power reactors in Pakistan—which are based on technology Beijing will probably abandon domestically—the accident in Japan provides Beijing with an opportunity to pause and contemplate conditioning its cooperation with Pakistan on improvements in nuclear safety and security. During such a pause, Beijing could consider the possibility of developing within the Nuclear Suppliers Group (NSG) a criteria-based approach to nuclear cooperation with states lacking full-scope safeguards (FSS). This strategy would be invoked irrespective of other discussions about future NSG membership and criteria that might be considered in that context.

A criteria-based approach would provide a roadmap for states without FSS, including Pakistan, to qualify for civil nuclear cooperation, thus placing China's current and future nuclear cooperation with Pakistan in an NSG process. The lynchpin in this approach is incentivizing China through the licensing of foreign reactor technology, so that China sees greater economic potential in achieving its longer-term ambition of becoming a nuclear exporter than in its shorter-term deals with Pakistan. Such an approach could help resolve persistent questions about the NSG's future, which were raised by the U.S.-India nuclear deal and by Russia's previous nuclear commerce with India. This strategy thus has the potential to resolve this issue in a way that strengthens the NSG, provides China with incentives to reconsider its cooperation with Pakistan, and gives Pakistan the international legitimacy it desperately seeks.

## Introduction

Since the announcement of the U.S.-India nuclear cooperation initiative in 2005, Pakistan has sought to negotiate similar terms with Washington, Paris, and perhaps other capitals. Just like their counterparts in Delhi, Pakistani officials cite growing energy demand as justification for civil nuclear cooperation. But a civil nuclear cooperation arrangement for Pakistan has greater symbolic than practical importance.

To be sure, Pakistan faces a severe energy crisis. Electricity shortages have grown increasingly acute in the last several years and there continues to be widespread “load shedding” (managed power outages) across Pakistan, with some cities receiving power just several hours per day. In the near term, Pakistan is receiving foreign aid to help it rehabilitate many of its existing conventional energy plants. However, chronic budget shortfalls preclude immediate investments to bring new thermal or hydroelectric generating capacity on line quickly enough to fill the supply deficit, estimated at 2,800 megawatts (MW). (Average electricity supply over the last several months was 11,500 MW, while demand averaged 14,340 MW, according to the Pakistan Electric Power Co.)<sup>1</sup>

Moreover, much of Pakistan’s energy crisis stems from corruption and mismanagement, which new technology will not redress. In this context, nuclear power is not the panacea Pakistan wishes it to be. It took nearly ten years for Pakistan to build each of its two Chinese-design reactors, Chashma-1 and -2, and it is unlikely that Pakistan could bring any more of these units on line before 2017.

However, the driver of Pakistan’s behavior on this issue is primarily political-psychological. While India increasingly measures itself in global terms, Pakistan remains narrowly focused on its status vis-à-vis India and cannot accept the notion that its overall power is waning. All apparent evidence suggests that Pakistan and India are now on divergent strategic trajectories. India is rising, its economy is growing, its military is increasingly capable; Delhi now accretes power on a global basis. Pakistan, on the other hand, is saddled by significant internal instability, decaying institutions and infrastructure, a moribund economy, and a rural human development index equal to destitute states in Africa. Despite these circumstances, or even perhaps because of them, Pakistani military and political leaders continue to insist on receiving equal treatment with India.

For very good reasons, the United States, France, the United Kingdom, and other countries have demurred when Pakistan has demanded a civil nuclear agreement comparable to India’s. In the United States, there is no support in Congress for a process that would lead to a “123” nuclear cooperation agreement with Pakistan.<sup>2</sup> The Pakistan lobby in Washington is much weaker than its Indian counterpart, which was crucial in building congressional support for the U.S.-India agreement.

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Internationally, there is also little inclination to grant Pakistan an NSG exemption similar to the one enjoyed by India. Many NSG participating governments are still smarting over the India deal; in addition, Pakistan's proliferation record is poor and well known, and its faltering economy inspires no confidence that a sustainable and profitable nuclear market will develop. No major reactor vendor will accept the political and financial risk of a reactor construction project in Pakistan, particularly amid persistent domestic terrorism.

Additionally, Pakistan is so deeply in debt that it could not purchase reactors on anything less than extremely favorable terms, such as those reportedly offered by China: soft loans to Pakistan for up to 82 percent of the \$1.9 billion cost of the reactors, a total that appears to be deeply discounted.<sup>3</sup> In sum, even if any state sought to negotiate a nuclear trade agreement with Pakistan, it is extremely unlikely that the arrangement would receive either domestic or international support.

Despite the limitations that the NSG guidelines place on civil nuclear cooperation with states lacking FSS—including Pakistan—China appears willing to bend the rules to provide two reactors to accompany the two it exported to Pakistan beginning in the late 1980s. The Chashma-1 and -2 contract predated China's membership in the NSG; Beijing is apparently prepared to justify the supply of additional reactors on the grounds they are "grandfathered" under the terms of the original agreement. If they are built, Chashma-3 and -4 will be first-generation, 340 MW (gross) Pressurized Water Reactors (PWRs), similar in design to Chashma-1 and -2.<sup>4</sup> The basic reactor design dates from the early 1970s. Although there have been no known major accidents involving this type of reactor, it lacks modern safety features characteristic of China's own new reactor fleet.

Official contractual terms have not been made public, if indeed they have been finalized—though Pakistan announced it had signed a contract with Shanghai Nuclear Engineering Research and Design in April 2009. Last fall, China formally notified the IAEA that it should be prepared to put two additional Chinese PWRs in Pakistan under safeguards, and, in March 2011, the IAEA Board of Governors approved a safeguards agreement for Chashma-3 and -4. And the International Atomic Energy Agency (IAEA) reported recently that construction on Chashma-3 began on May 28, 2011, and construction of the fourth unit is slated to start in 2012.<sup>5</sup> These are clear signs that both China and Pakistan intend to proceed with the construction.

If the status quo holds, six or more years from now Pakistan will bring on line two reactors from China that would cover just 20 percent of its current electricity shortfall. But this arrangement provides neither the international status nor the equality with India that Pakistan seeks. Pakistan would receive old technology from an established ally, without the legitimacy accorded India by the NSG and the United States to engage in international commerce. Moreover, from a global perspective, China's "grandfathering" of Chashma-3 and -4 will

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further erode the NSG at a time when it is encountering greater difficulty in achieving consensus on other issues. For these reasons, an alternative approach to China's nuclear cooperation with Pakistan should be considered now.

## Competing Interests

Civil nuclear cooperation with Pakistan puts in direct competition two of the highest priorities of the Obama administration: strengthening the nonproliferation regime (with Chinese participation) and developing a strategic relationship with Islamabad. Washington has already been tempted to try to split the difference by holding out the promise of nuclear cooperation down the road as a carrot to induce improved Pakistani cooperation on terrorism today. Yet the broader U.S.-Pakistan relationship remains so fundamentally troubled that a civil nuclear cooperation initiative, even if it could be culminated more quickly than cooperation with India—six years and counting!—would be thin dressing over very deep wounds.

Though Non-Proliferation Treaty (NPT) purists in the NSG never embraced the India deal, they were cajoled and pressured to support it and join the NSG consensus in 2008. They also argued at the 2010 NPT Review Conference that, unless the P-5, the five permanent members of the UN Security Council—the United Kingdom, Russia, France, China, and the United States—made greater disarmament commitments, the nonproliferation pillar of the NPT regime could not be strengthened. With the NSG facing an uncertain future, these states certainly do not wish to entertain another NSG exemption or further weakening of its guidelines.

At the same time, they want to keep China within the NSG, especially as it is likely in coming decades to be a significant nuclear exporter. Given China's strategic interest in cooperating with Pakistan, this could be done by fashioning criteria for nuclear cooperation with states lacking FSS, which could advance nonproliferation goals, enhance public confidence in nuclear safety, and strengthen China's commitment to working within international regimes. If this cannot be done, some NSG members seem to prefer that China assert a grandfather provision and work around the NSG, which would be less damaging than a conflict within the group over Pakistan-specific cooperation.

China has multiple interests, not all of them evident to outsiders. It clearly was unhappy with the NSG-India deal. It sees its relationship with Pakistan in largely instrumental terms and supports Pakistan's competition with India, even as Beijing also pursues improved relations with Delhi. It would be unnatural for China not to seek some way to "get even" with the United States and India for launching this sequence of developments.

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Yet China also has a huge domestic stake in nuclear energy expansion, as well as a long-term interest in developing export markets for its nuclear reactors. Chinese leaders certainly recall that shortly before Chashma-1 was started up at the end of the 1990s, safety experts at the IAEA urged Pakistan to delay operation. China also knows that Pakistan's regulatory agency raised concerns about nuclear safety at Chashma in the wake of Fukushima. A serious nuclear accident in Japan with U.S. technology sent waves of anxiety through China. China must be concerned about the prospect of a nuclear accident occurring in China or Pakistan with Chinese technology. Such an event would be disastrous for China's reputation as a nuclear supplier and could spark doubts within China over its nuclear program.

Following the Fukushima disaster, Chinese authorities ordered a pause and safety review of its internal program. The safety review of existing plants is complete, but China is holding off approvals on new construction and considering technology options for future nuclear reactor deployment. China will reconsider safety criteria in its ambitious program to build both indigenous and foreign-provided reactors on a large scale. Chinese officials report that it is widely expected that China will cease building old reactors, particularly of the type now being constructed at Chashma.<sup>6</sup>

The case for a rethink in Pakistan is strong, notwithstanding Pakistan's apparent good record on nuclear safety. Pakistan is neither stable nor secure; recent earthquakes and floods have demonstrated the state's lack of capacity to manage disasters; its economic and energy policies are woefully inefficient; and the technology represented by the Chinese reactor may not meet safety standards that the international community will accept in light of Fukushima. The prevailing sentiment on nuclear safety was indicated recently in statements by UN Secretary-General Ban Ki-moon, who is pressing for enhanced standards and greater IAEA involvement in implementing them, and by Sergei Kiriyenko, the director of Russia's state atomic energy corporation, Rosatom, who called for quickly retiring previous-generation plants and replacing them with new, safer ones.

With the single exception of China's willingness to export 1970s-vintage power reactors to a country with major security and infrastructure problems, China has demonstrated great prudence in carefully and deliberately building up its own nuclear program from the mid-1980s through 2006, by setting its sights on ever-more modern power reactors. China's material interests in taking great care are complemented by its political and status interests. If China had reason to believe that nuclear cooperation with Pakistan could be made legitimate through the NSG—and that the criteria for such cooperation were acceptable to China in light of Fukushima—Beijing might be willing to take time to explore this approach. But if, in the course of negotiating within the NSG on appropriate criteria, Beijing determined that the emerging criteria were too onerous, it could end its pause and proceed with Pakistan as before.

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Finally, independent of its arrangements with China, Pakistan continues to demand nuclear cooperation from the United States on the same terms as India—to be allowed to conduct international nuclear trade while retaining a military nuclear program outside of IAEA safeguards. Pakistan’s focus on securing a nuclear agreement with the United States underscores that status outweighs economics. Pakistan’s desire for international legitimacy supports this strategy. Pakistani leaders say privately that they care more about the principle of being entitled to engage in nuclear cooperation and less about when foreign partners actually build any reactors. If the NSG could negotiate reasonable criteria that would make Pakistan eligible for international nuclear trade, it would be worth the wait.

Public information suggests that no one has a strategy for reconciling these multiple interests. We outline such a strategy that could at least serve a heuristic function.

## A Strategy

As the Japanese disaster shows, an accident anywhere can threaten nuclear programs and cause public alarm everywhere, including in China, where authorities moved quickly to staunch potential popular agitation and fear spawned by the accident. Because China’s nuclear program is wholly run by the central government authorities, the Chinese leadership understands that a serious nuclear accident in China would touch off antinuclear protests that could mushroom into a mass movement opposing Communist Party rule. China’s ongoing safety review also provides it with an opportunity to rethink its cooperation with Pakistan.

A serious accident involving a nuclear reactor exported by China could impair China’s ambitions to become a global exporter of nuclear equipment. Having already committed China to a future energy strategy that relies heavily on nuclear power, Beijing has major, long-term interests in ensuring that Pakistan is better prepared to deal with all contingencies before new power plants are built there. And should Pakistan meet NSG criteria for cooperation in the future, China would be the first in line to benefit. In the interim, Chinese state-owned firms could work with Western vendors to share intellectual property so that, in the future, China would be able to export more modern reactor designs. This is the lynchpin of this strategy: creating incentives for China to reconsider its cooperation with Pakistan that do not currently exist, but that are wise considering the political fallout from the Fukushima disaster.

Were the United States and other NSG participating governments to demonstrate willingness to facilitate China’s emergence as a global nuclear equipment vendor state, China could be more inclined to put its nuclear cooperation with Pakistan within the NSG framework—for which criteria would

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be negotiated in light of the Fukushima disaster. To NSG states—and especially those concerned about the implications of the U.S.-India deal—this approach would benefit the NSG more than if China decides to bend the rules or, worse, if NSG members spark a political crisis with China that threatens its continued participation in the group. China would be more receptive to this approach if the NSG created rules that do not prevent its cooperation with Pakistan.

This approach also could be acceptable to Pakistan, as the alternative of Chinese supply without an imprimatur from the NSG does not satisfy Pakistan's status motivations. Pakistan's interests in legitimacy would be better served by a criteria-based approach within the NSG, rather than the exception it currently seeks. Its desire for technology and modernity would also be fulfilled by being able to negotiate for better reactors, including in the future from a China empowered with intellectual property and licenses from foreign partners. As nuclear power doesn't solve Pakistan's near-term energy crisis, Islamabad would be better off waiting for the NSG process to provide legitimacy, giving Pakistan time to improve its security and economy, and especially its transmission and distribution system to better deliver baseload power from larger nuclear power plants.

The parallel issue of India's possible membership in the NSG would need to be considered in this strategy (which is distinct from cooperation on specific nuclear projects). Pushing independently and quickly on Indian membership would alienate China (and mobilize Pakistan); it is also quietly opposed by many NSG members now. Also, establishing criteria that would permit cooperation with Pakistan probably would be impossible if India were already an NSG member. Yet India's interests would be served by a strategy that avoids early supply by China to Pakistan outside the NSG. (A crisis in Pakistan's nuclear power complex could affect how the public receives the idea of nuclear plants in India.)

Lastly, any potential criteria-based strategy cannot ignore the concerns of non-NSG parties to the NPT. Many of these states used the opportunity of the 2010 NPT Review Conference to criticize the NSG exception for India. In fact, though many of these states are friendly with India, they submitted language for consideration in the Review Conference final document that would have required full-scope safeguards for trade as one way to undo the India exception. These efforts failed, but friction at the Review Conference underlines the need for greater transparency in NSG deliberations, particularly about criteria for trade or membership, and for more frequent consultations with non-NSG parties. To avoid further recriminations at the 2015 NPT Review Conference and the preceding preparatory meetings, such consultations would need to begin soon.

## Possible Criteria

Of course, it will be very difficult to negotiate criteria that will be mutually acceptable to stalwart nonproliferation states, including those outside the NSG,

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as well as China and Pakistan. Nonproliferation-minded states will want much greater confidence that Pakistan's nuclear materials will not be captured or controlled by terrorists. They will want Pakistan to stop its widely reported nuclear arms buildup. They will probably not accept the facile delineation between civil and military nuclear facilities that India was allowed.

Many of the possible criteria may be quite subjective, such as the adequacy of nuclear security measures. To the extent possible, measures should be identified to judge performance against criteria as objectively as possible, which will facilitate agreement on when criteria have been satisfied. But the acceptability of possible criteria to Pakistan is less important than their acceptability to China. Because China has additional interests, it is possible that Beijing would embrace criteria favored by other international players but not immediately acceptable to Pakistan. Whether and how all of these interests could come together in developing criteria within the NSG cannot be known until the effort begins.

Achieving consensus in the NSG on the criteria will be no easy feat if the difficulty over negotiations on enrichment and reprocessing technology transfer rules is any indication. However, at a minimum, most NSG members could probably agree that the criteria should include the steps taken by India, in particular:

- Separating civil and military facilities.
- Declaring civil facilities to the IAEA and placing them under safeguards.
- Signing and implementing an Additional Protocol for civil facilities.
- Maintaining a nuclear test moratorium.
- Refraining from transferring enrichment and reprocessing technologies to states that do not possess them.
- Securing nuclear materials and technologies through comprehensive export controls.
- Harmonizing and adhering to the Missile Technology Control Regime (MTCR) and the NSG.

Pakistan has already taken several of these steps in whole or in part. Its separation of civil and military facilities, though fewer in number, is much more distinct than India's, as all existing "civilian" nuclear facilities (the Karachi nuclear power plant, Chashma-1 and -2, and the two PARR research reactors) are under IAEA safeguards. Pakistan also does not have a fast reactor program or civil reprocessing capabilities, which were critical issues for India as it weighed its separation plan. Pakistan also has passed a weapons of mass destruction export control law and is in the process of harmonizing its control lists with the

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international strategic trade control regimes. And it maintains a test moratorium, though in practice this is contingent on India continuing its testing freeze.

The NSG also stated that one of its objectives in establishing an exemption for India was to “affect positively the non-proliferation commitments and actions of those outside the traditional nuclear non-proliferation regime.” As such, the suppliers recognized India’s voluntary actions to become “a contributing partner in the non-proliferation regime.” Here, too, Pakistan has taken some notable steps, including participating in the Global Initiative to Combat Nuclear Terrorism and the April 2010 Nuclear Security Summit in Washington.

Given that safety and security are paramount concerns for the operation of nuclear power plants in Pakistan—as well as globally after Fukushima—it is reasonable to expect that more will be required of Pakistan than was expected of India in 2008. To strengthen nuclear security practices, the criteria could include:

- Signing and ratifying the International Convention for the Suppression of Acts of Nuclear Terrorism.
- Ratifying the amended Convention on the Physical Protection of Nuclear Materials.
- Implementing the recommendations on physical protection of nuclear materials and facilities contained in INFCIRC 225/rev.5.
- Inviting International Physical Protection Advisory Service missions to nuclear facilities and implementing the recommendations resulting from the missions.
- Participating in subsequent Nuclear Security Summits and contributing to the fulfillment of the resulting work plans.

Presumably, the Fukushima disaster will spur thinking about global nuclear safety standards, including in India, particularly in associated requirements for disaster management and mitigation capabilities. It also underscores the importance of having a strong and independent nuclear regulator. Though this will be a work in progress for some time, criteria in the area of nuclear safety could include:

- Signing, ratifying, and implementing the Convention on Nuclear Safety, including making public annual national reports under the convention.
- Inviting peer review of safety planning and conducting regular performance testing of nuclear safety and disaster management preparations.
- Establishing a legally and financially independent nuclear regulator.
- Signing and ratifying the Conventions on Assistance in Case of a Nuclear Accident and Early Notification of a Nuclear Accident.

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- Establishing cooperative agreements with the IAEA Department of Nuclear Safety and Security, to include inviting IAEA operational safety review and related teams.

In addition to establishing national export control laws, the NSG could also require stronger national practices and increased participation in international efforts to prevent proliferation. While export control and nonproliferation criteria should be as forward-looking as possible to be meaningful, in light of Pakistan’s poor previous record the criteria should also include resolution of past cases. As such, the criteria could include:

- Adhering to all four (Australia Group, Wassenaar, NSG, and MTCR) control regimes.
- Harmonizing multilateral and national control lists concurrently.
- Adhering to United Nations Security Council Resolution 1540, to include submitting a national report and working with the 1540 Committee to resolve deficiencies.
- Criminalizing proliferation activities in national law and prosecuting violations.
- Cooperating with the IAEA and other international authorities to resolve past cases of proliferation activity.

All of these criteria are meant to be suggestive and by no means exhaustive. In many cases, Pakistan probably already meets the criteria, but there is plenty of room for it to improve its practices, and Pakistan should be expected to demonstrate that it heeded lessons from the Fukushima disaster. Pakistan recognizes it has an image problem on nuclear security and has undertaken many steps in recent years—including a greater level of transparency and participation in international initiatives—which indicate some inclination to embrace more fulsomely international nonproliferation and nuclear safety practices.

## Two Hard Issues

As much as Pakistan may meet some of the criteria discussed above and China may consider these positive elements of a new approach to cooperation with non-NPT states, two issues remain that may be too difficult to overcome. First, both Pakistan and China will have a hard time accepting criteria related to Pakistan’s nuclear weapons program, particularly supporting a Fissile Material Cutoff Treaty (FMCT). The second issue is that Pakistan may also chafe at any criteria that mandate specific behavior to counter international terrorist groups that operate from Pakistani soil.

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*Pakistan's Nuclear Weapons Program.* In its NSG exemption, India explicitly agreed to “work with others towards conclusion of a multilateral Fissile Material Cut-Off Treaty.” Needless to say, Pakistan’s behavior in the Geneva Conference on Disarmament (CD)—coupled with significant growth in its plutonium production capabilities at Khushab—makes this a potential deal-breaker.

Notwithstanding UN Ambassador Zamir Akram’s CD arguments for an FMCT that includes existing stocks and intrusive verification, Pakistan’s real opposition to an FMCT is the constraints it would place on Pakistan’s nuclear modernization. Pakistan’s Strategic Plans Division (SPD) appears to have decided that Pakistan requires significantly more plutonium to maintain a credible and capable nuclear deterrent force. Recent missile testing activities in Pakistan appear to be consistent with such SPD decision making.

More importantly in this context, though, is China’s apparent satisfaction with Pakistan’s actions to block CD negotiations on an FMCT. China, too, is not eager to negotiate an FMCT, which would complicate Beijing’s calculated hedging on the future size of its nuclear arsenal. China has been content to let Pakistan take the heat for blocking the CD negotiations while it remains silent. Thus, it is hard to imagine China agreeing to support FMCT negotiations as a criterion it would require of Pakistan. On the other hand, a willingness to seek criteria for cooperation with Pakistan could be an incentive for Islamabad and Beijing to at least allow negotiations on an FMCT to begin, knowing that they will retain options to block its completion.

Fissile material production gets to the heart of an issue that was integral to the U.S.-India nuclear agreement, though it was never made an explicit criterion. Even while Indian officials made public statements arguing that the civil nuclear agreement would not impact its strategic nuclear program, they assured U.S. counterparts that India’s nuclear weapons program is in essence *de minimis*, intended to serve a political function but not to be used. These assurances were in part aimed at deflecting criticism that the foreign supply of nuclear material would benefit India’s nuclear weapons program. They also were intended to reassure the United States and other countries that India would be a responsible steward of nuclear weapons and promote “stability, democracy, prosperity, and peace.” Publicly available estimates of India’s current nuclear stockpile are vague, but it probably consists of perhaps 50–70 weapons. This number appears to have been relatively static for several years, meets its definition of a minimum deterrent, and is unlikely to grow dramatically and in ways that would destabilize the region absent a change in India’s strategic outlook.<sup>7</sup>

Pakistan’s nuclear calculus is quite different; it appears to be on a path to build and deploy several hundred nuclear warheads in the next decade. Pakistan’s nuclear posture emphasizes possible use—including at a relatively low threshold—in response to Indian incursions into Pakistani territory. Pakistan’s

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nuclear weapons allow it to continue employing a sub-conventional military strategy in Afghanistan and India without fear of reprisal. While this may serve Pakistan's regional strategic aims, it is destabilizing and does not serve the interests of regional peace and stability.

As a result, the NSG would need to consider criteria for Pakistan that encourage restraint and promote stability without undermining its strategic deterrent. These may be deal-breakers for Pakistan, but perhaps not for China. Such criteria could include: a fissile material production moratorium (which presumably could be monitored via national technical means), and a commitment not to mate warheads with delivery vehicles and deploy them.

*Combatting Terrorism.* Counterterrorism cooperation is another criterion that must be examined. In the U.S.-India 2005 joint statement, India agreed to “combat terrorism relentlessly.” Pakistan is critical in countering global extremism, but is clearly not “relentless” in its efforts. It targets only those groups that threaten Pakistan's internal security or whose aims do not serve Pakistani interests in Afghanistan and India, such as the Tehrik-i-Taliban Pakistan. Pakistan does not promote stability; it uses a sub-conventional strategy in the region to pursue its revisionist interests at the expense of regional peace and security. The recent killing of Osama bin Laden underscores the terrorism challenge. Either Pakistani security forces were complicit in sheltering him and the civilian government was incapable of changing this policy, or the military's control of the Pakistani state is more tenuous than Pakistan would lead the outside world to believe.

The terrorism issue cannot be ignored, not least because many world leaders, President Obama included, have cited nuclear terrorism as one of the gravest threats facing the world. Despite no known record of terrorists specifically targeting nuclear facilities in Pakistan and Pakistan's great efforts to strengthen its nuclear security practices and reassure the international community, given the proximity of violent extremists to tons of fissile material Pakistan has become the poster child for global nuclear terrorism concerns. As Pakistan's nuclear weapons program grows, so, too, will the amount of fissile material transiting between production and assembly facilities. This theoretically creates more opportunities for terrorist attack or diversion with the help of potential sympathizers within the nuclear program.

Pakistan will argue both that its nuclear security program is “foolproof” and that it is bearing great costs to combat terrorism, in large part because of the U.S. presence in Afghanistan. But as long as it continues to support the Haqqani network, harbor the Quetta shura, and aid and abet Lashkar-e-Taiba's attacks on India, Pakistan cannot be considered a contributor to regional peace and security. As much as Pakistan may be unable to accept constraints on its support for these groups on national security grounds, the NSG should consider conditioning nuclear supply on:

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- Participation in and support for global counterterrorism efforts.
- Creation of and active support for programs to suppress and combat domestic terrorism.
- Cessation of state support—to include aiding, abetting, and harboring—and dedicated efforts to counter groups that threaten regional peace and stability by conducting attacks in neighboring states.

## One Possible Objection and a Response

This criteria-based strategy was stimulated by the particular case of China’s supply of nuclear reactors to Pakistan outside of the NSG policy framework. It is clear these criteria are more stringent than the fairly weak set of actions that India undertook to qualify for an NSG exception, although this took place in a pre-Fukushima world. Pakistanis will certainly object to the higher standard as unfair. They will argue that in many cases (for instance, the need for an independent regulator), Pakistan meets or exceeds the criteria and has a better record than India. This may be true. It would be preferable if India—and indeed all countries undertaking nuclear trade—met these criteria, too.

One way to demand more of both India and Pakistan is to consider these criteria in the context of future NSG membership. The United States has already held out the prospect of NSG membership to India, but has not offered publicly any suggested timeframe or conditions that India would need to satisfy to secure it. U.S. interest in promoting Indian membership will catalyze a debate within the NSG on whether and how to include new members, particularly those that do not have FSS.

The United States is now thinking ahead to how a discussion on criteria for membership might be structured. Criteria for Chinese trade with Pakistan could be discussed in this context, as the United States agrees with other NSG states that India will not be permitted to join the group in short order, and that a period of discussion about the terms of India’s membership might take place over a period of several years.

Were a discussion about criteria for Chinese nuclear supply to Pakistan to be part of a more general discussion about future criteria for membership of states without FSS—including Pakistan and India—it might be possible to arrive at a nondiscriminatory solution that, in practice, required both Pakistan and India to provide additional nuclear safety, security, and nonproliferation benefits. The bar for Pakistan’s membership in the NSG would be set higher than that set for India to obtain its 2008 exemption, but India would likewise have to meet higher standards to become a member than to obtain the exemption.

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## Conclusion

Ongoing Chinese nuclear trade with Pakistan threatens to further erode adherence to the Nuclear Suppliers Group guidelines. Until now, NSG participating governments have neither seriously challenged China on this issue, nor offered a vision for how to move beyond it. For its part, China recognizes that nuclear safety, particularly related to first-generation reactors like those it is constructing in Pakistan, will come under greater scrutiny after Fukushima. However, China's double standard with regard to these reactors—it does not consider them sufficiently safe to build more in China, yet it is proceeding with construction in Pakistan—demonstrates real risks to its objective of becoming a nuclear exporter over the long term.

The criteria-based strategy to address Chinese nuclear trade with Pakistan is one effort to resolve this issue in a manner that leaves the NSG stronger, gives China incentives to reconsider this cooperation, and provides Pakistan with the legitimacy it desperately seeks. It is incumbent on NSG governments, including China, to see virtues beyond their current course of action and hammer out an arrangement along these lines that better serves both regional and global interests in the years ahead.

## Notes

- 1 Daily power reports are available on the Pakistan Electric Power Company website, [www.pepcogov.pk/pow\\_situation.php](http://www.pepcogov.pk/pow_situation.php).
- 2 Section 123 of the Atomic Energy Act of 1954 (and subsequently amended) establishes conditions for U.S. civil nuclear cooperation agreements with other countries. The act is available at [www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0980/ml022200075-vol1.pdf](http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0980/ml022200075-vol1.pdf).
- 3 See, for instance, “Nuclear Power in Pakistan,” World Nuclear Association, June 2011, [www.world-nuclear.org/info/inf108.html](http://www.world-nuclear.org/info/inf108.html).
- 4 Ibid.
- 5 “Construction of New Pakistani Reactor,” *World Nuclear News*, June 15, 2011, [www.world-nuclear-news.org/IT-Construction\\_starts\\_of\\_fourth\\_Pakistani\\_reactor-1506114.html](http://www.world-nuclear-news.org/IT-Construction_starts_of_fourth_Pakistani_reactor-1506114.html).
- 6 Mark Hibbs, “After the Shock: Implications of the Japanese Nuclear Crisis,” *Jane's Intelligence Review*, June 2011, 49.
- 7 Robert S. Norris and Hans M. Kristensen, “Indian Nuclear Forces, 2008” *Bulletin of the Atomic Scientists*, November/December 2008, 38–40.

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