



## **Strengthening the U.S.-India Nuclear Security Relationship**

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### **INTRODUCTION**

Nearly a decade since the United States and India broke ground on bilateral nuclear cooperation, there exists broad, unrealized potential for expanding nuclear security cooperation between Washington and New Delhi. Building on India's positive contributions to the 2016 Nuclear Security Summit in Washington, the United States and India should seek a new program of cooperation, across policy, technical, and intelligence domains, to protect their citizens from the threat of nuclear terrorism. Importantly, such cooperation should be implemented with care for national interests (nuclear security is understandably a sensitive topic) and guided by the principles of mutual benefit, equality, and continuous improvement. This paper will outline the security challenges shared by India and the United States, elaborate further on guiding principles for prospective cooperation, and present a menu of potential projects which could be implemented as appropriate between key stakeholders in India and the United States.

### **A SHARED THREAT OF NUCLEAR TERRORISM**

In this age of transnational radicalism, porous borders, growing cyber capabilities, and availability of nuclear and radiological materials, the United States and India face a growing threat of catastrophic terrorism. Groups such as the Islamic State have vowed to carry out spectacular attacks against both the United States and India, seeking to destabilize, weaken, and ultimately destroy these democratic governments. They wield territory from which to organize, considerable financial resources to utilize at their disposal, and broad networks to exploit. The risk that these groups might now seek to acquire and use nuclear or radiological

materials to advance their destructive ideologies presents a clear and present danger to both Washington and New Delhi.

India, in particular, is presented with the considerable challenge of addressing a wide range of terrorism threats – from domestic left-wing extremists to regional terrorist organizations such as *Lashkar-e-Taiba* (LeT) and *Jamaat-ud-Dawa* (JuD) to major transnational groups such as Al-Qaeda and the Islamic State. Not all of these groups will seek nuclear materials or have the capabilities of acquiring them, but all have an inherent interest in destabilization and inflicting mass disruption, if not destruction.

Despite important efforts to improve nuclear security around the world over the last two decades, nearly 2,000 *metric tons* of weapons-usable nuclear materials are still found in 24 countries and in over 100 facilities worldwide, including many in the United States and India. Considering the fact that it takes only several kilograms of plutonium (enough to fit inside a can of Coca-Cola) or several dozen kilograms of uranium (an amount equivalent to the size of a grapefruit) to detonate a nuclear weapon, the security and accounting of these materials continues to represent a policy imperative for each country and the international community.

Even more widely available are potentially dangerous radiological sources such as cesium-137, cobalt-60, and iridium-192 which are found in common applications in medicine, industry, and science. All too often, these sources are found in locations that are poorly secured creating major security vulnerabilities. In the hands of a terrorist organization, a radiological dispersion device (RDD), also known as a “dirty bomb”, could lead to a serious loss of life, environmental impacts, and significant economic damage in the hundreds of millions (if not billions) of dollars due to the high costs of cleanup and evacuation. In a country like India, with dense population centers and considerable availability of radiological sources, the potential consequences of a radiological “dirty bomb” attack are quite serious.

Ever since the September 11, 2001 and November 2008 terrorist attacks in the United States and India respectively, Washington and New Delhi have significantly bolstered their efforts to prevent the threat of catastrophic nuclear terrorism. Security measures were bolstered at nuclear facilities and other strategic locations, law enforcement and intelligence

agencies enhanced their capabilities to monitor terrorist networks, and political leaders paid considerably more attention to the issue of nuclear terrorism.

In 2010, the United States launched the Nuclear Security Summit process, which brought together dozens of world leaders to discuss and adopt measures to prevent terrorists from acquiring weapons-usable nuclear materials. At the 2010 Summit, India announced the development of a Global Centre for Nuclear Energy Partnership (GCNEP) which has since served as the central platform for India's international cooperative activities in the realm of nuclear security. Since its establishment, the GCNEP has concluded Memoranda of Understanding with the IAEA, the United States, France, Russia and the United Kingdom – and has hosted at least 30 major workshops for nuclear security specialists from India and the surrounding region.

At the final Summit in 2016, Prime Minister Narendra Modi announced that India will join multilateral “gift baskets” on counter nuclear smuggling and strengthening the global nuclear security architecture, the latter of which will establish a Nuclear Security Contact Group that will advance the work of the Summit process beyond 2016. Perhaps most significantly, Prime Minister Modi announced that India will join INFCIRC/869, a commitment initially tabled at the 2014 Summit in The Hague that supports enhanced efforts to strengthen nuclear security implementation. These measures include a commitment to meet or exceed the IAEA physical protection recommendations set forth in INFCIRC 225/Rev5, the IAEA Code of Conduct on the Safety and Security of Radioactive Sources, and the Nuclear Security Recommendations on Nuclear and Other Radioactive Material out of Regulatory Control; a commitment to improve effectiveness of nuclear security regimes through self-assessments and peer reviews; and a commitment to share best practices, conduct training exercises, bolster emergency preparedness, and engage in bilateral and multilateral cooperation.

Building on the success of the 2016 Nuclear Security Summit, and noting the advances recently made by President Obama and Prime Minister Modi to strengthen defense, economic, and strategic ties between New Delhi and Washington, India and the United States should consider launching a new cooperative program on nuclear security. This would have considerable benefits for both countries as it would help bolster efforts to keep our citizens

safe from the threat of nuclear terrorism, enhance India's image on the international stage, and advance the objectives of the Nuclear Security Summit process beyond 2016.

In order to be successful, this program of cooperative work will have to reflect a true partnership and be guided by the principles of mutual benefit, equality, and continuous improvement. These principles are articulated to ensure that both the United States and India can identify common values that will underlie cooperative efforts and create a lasting architecture as U.S.-India bilateral relations evolve. The projects described further on in this paper are specifically chosen to reflect these guiding principles, but should not be taken as the only potential projects worthy of consideration.

### **OPTIONS FOR PROSPECTIVE COOPERATION**

The following activities could be undertaken between relevant stakeholders in India and the United States towards developing a comprehensive nuclear security cooperative program:

**Best practice exchanges.** Both India and the United States have well-established institutional and legal mechanisms to tackle a variety of threats and vulnerabilities in the area of nuclear security. Nevertheless, there is always scope for additional improvement and learning from other countries' best practices is one of the best tools to do that. India and the U.S. could start this process by setting up a joint task force on nuclear security best practices that could potentially look at a number of topics including insider threat mitigation, vulnerability assessments, material control and accounting systems, physical protection systems, nuclear security budgeting and nuclear security culture. Tabletop exercises involving operators from both countries could be organized under the auspices of the GCNEP to do general vulnerability assessments as well as simulate insider threat vulnerabilities. Similarly mock exercises to examine the effectiveness of physical protection systems can also be conducted. The U.S. Nuclear Regulatory Commission and the Indian Atomic Energy Regulatory Board can collaborate in strengthening practices around material control and accounting systems. Seminars, conferences, workshops, interactions, and studies to understand each other's nuclear security culture can also be taken up. Multiple levels of dialogue – Track 1, Track 1.5 and Track 2 level engagements involving multiple stakeholders can be initiated between India and the United States. Also periodic political dialogues and consultations on nuclear security between the Ministry of External Affairs and the U.S. State Department could help facilitate progress on these initiatives.

**Counter Nuclear Smuggling Cooperation.** The United States and India could establish a bilateral dialogue on counter nuclear smuggling, focusing on best practice exchange, tabletop exercises, technology development, nuclear forensics, and law enforcement cooperation. Scientists from the two countries could collaborate on research & development (R&D) to develop more sophisticated radiation detection monitors. As part of this new dialogue, U.S. and Indian multi-agency teams could conduct an annual tabletop exercise and best practice workshop on counter nuclear smuggling at the GCNEP. Furthermore, the U.S. and India could explore opportunities to deploy additional radiation portals at major seaports and airports.

**Emergency Response Cooperation.** While India and the United States have instituted several different measures, both in terms of institutions and detailed plans to respond to crises and emergency situations, preparedness levels to effectively respond to incidents can always be a challenge, particularly in bringing about synergy among multiple agencies involved in the effort. Establishing periodic interactions, conducting joint simulation exercises involving Indian and American security and atomic energy agencies could go a long way in strengthening emergency response practices. Agencies involved in on-site and off-site emergency response efforts of both the countries could also test the resilience of their policies in practice. Instituting cooperation at the level of the first responders, such as the police, fire service, and other specialized forces such as the Central Industrial Security Force (CISF) in India, expanding awareness among the medical community as well as among the larger public are of immense value. Full-scale emergency exercises instituted between India and the U.S. on an annual basis can help strengthen the preparedness levels as well as address complacency issues. Many of these initiatives could be taken up the aegis of GCNEP.

**Peer Reviews.** While India and the United States are open to the idea of IAEA peer review processes, both countries could also possibly explore peer reviews undertaken by like-minded countries as a way to strengthen nuclear security practices. Such review exercises could help in ensuring that all significant risks and vulnerabilities are identified, measures to mitigate those are developed and see to it that these measures are instituted.

**Regulatory Development.** U.S. experts from the Department of Energy and the Nuclear Regulatory Commission could collaborate with their counterparts from the Indian Department of Atomic Energy (DAE) and the Atomic Energy Regulatory Board (AERB) on regulatory development, ensuring that comprehensive regulatory infrastructure supports effective nuclear security practices. Particular attention could be placed on jointly developing performance-based regulations, as well as regulations focused on insider threat mitigation. Regulatory cooperation could also be useful in the context of regulatory reforms proposed through the Nuclear Safety Regulatory Authority (NRSA) bill in the Indian Parliament.

**Radiological Security Cooperation.** Given the widespread availability of radiological sources there is considerable scope between the United States and India for potential collaboration on radiological source security. The two countries could commit to joint efforts focused on

(1) improving the security of IAEA Category 1 radiological sources and storage facilities; (2) eliminating excess or unneeded radiological sources; (3) replacing certain radiological sources with proven alternatives for certain applications like blood irradiators; and (4) joint research and development (R&D) on alternatives to radiological sources such as Cesium-137.

**Counterterrorism and Law Enforcement Cooperation.** India's National Investigation Agency (NIA) could broaden its engagement with U.S. counterparts at the Federal Bureau of Investigation (FBI), the Department of Homeland Security (DHS), and the Department of Energy (DOE) to include a dedicated dialogue focused on the threat of nuclear and radiological terrorism. This could be a useful forum to exchange pertinent information regarding emerging threats, discuss threat mitigation strategies, and collaborate on joint counter nuclear terrorism activities. This channel of communication could exist as a stand-alone dialogue or as part of the existing U.S.-India Counterterrorism Dialogue or the U.S.-India Homeland Security Dialogue.

## **POTENTIAL POLITICAL AND LEGAL FRAMEWORKS FOR COOPERATION**

A number of legal agreements and political frameworks could provide the foundation for future nuclear security cooperation between the United States and India. Though it does not list nuclear security cooperation as a possible area for cooperation, the 2008 U.S.-India Civilian Nuclear Cooperation Agreement allows the two governments to cooperate in "other areas of mutual interest" as long as there is common agreement. Future nuclear security cooperation could also be facilitated under the auspices of the U.S.-India Counterterrorism Working Group or the the U.S.-India Homeland Security Group.

Another option is to establish a new Bilateral Working Group on Nuclear and Radiological Security under the auspices of the U.S.-India Strategic Dialogue. The bilateral working group, chaired at the sub-ministerial level between the U.S. Department of Energy and the Indian Department of Atomic Energy (DAE), could foster meaningful engagement on new projects and providing a political basis for future cooperation. The bilateral working group could have several standing committees on various topics such as materials minimization, radiological security, and counter nuclear terrorism that would meet on a quarterly basis to maintain a consistent channel of communication, which will develop rapport between U.S. and Indian officials and ensure that projects progress as planned.

An important element of fostering meaningful cooperation on nuclear and radiological security is information exchange. Luckily, since 2002, an information sharing agreement has been in force between the United States and India, allowing representatives of the two governments to exchange classified information. Having such an agreement in place can allow the two governments to share critical information related to nuclear and radiological threats, nuclear smuggling, and threat mitigation strategies.

Finally, both the governments could establish a U.S.-India Nuclear Security Initiative along the lines of the U.S.-India Clean Energy Initiative and the U.S.-India Agricultural Initiative. Both these initiatives have been successful models of collaboration with the two governments investing a certain amount of resources for implementing key proposals. This initiative could provide the broad the institutional framework to develop and implement the nuclear security cooperative program.

## **CONCLUSION**

Given the strengthening of U.S.-India relations, Washington and New Delhi should capitalize on the opportunity to expand bilateral cooperation on nuclear security matters. India's leadership at the 2016 Nuclear Security Summit in Washington demonstrates India's interest in enhancing the global nuclear security architecture through international collaboration. While the U.S.-India Civilian Nuclear Agreement provides a broad legal framework for bilateral nuclear cooperation, political action is necessary to utilize these arrangements focused on nuclear and radiological security.

In addition, a new U.S.-India bilateral working group focused on nuclear and radiological security between the United States and India could establish a political framework for nuclear security cooperation that will further strengthen the countries' strategic relationship. While both countries already cooperate on defense and trade matters, the goodwill generated by shared commitment in nuclear security can accelerate and rejuvenate dialogue in other spheres of the U.S.-India bilateral relationship.

The projects listed in this paper, and guided by the principles of mutual benefit, equality, and continuous improvement, will not only serve both countries' interests, but also

strengthen international security by reducing the risks of nuclear terrorism. The United States and India both face the same threat of catastrophic nuclear terrorism, and both countries have much to offer on unique approaches to securing sensitive nuclear and radiological material.



**ABOUT THE NUCLEAR THREAT INITIATIVE**

The Nuclear Threat Initiative works to protect our lives, environment, and quality of life now and for future generations. We work to prevent catastrophic attacks with weapons of mass destruction and disruption (WMDD)—nuclear, biological, radiological, chemical, and cyber. Founded in 2001 by former U.S. Senator Sam Nunn and philanthropist Ted Turner, NTI is guided by a prestigious, international board of directors. Sam Nunn serves as chief executive officer; Des Browne is vice chairman; and Joan Rohlfing serves as president.