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IPCS DISCUSSION



GLOBAL NUCLEAR MATERIALS SECURITY PERSPECTIVES FROM INDIA



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The first of a two-part exercise, the IPCS discussion on Global Nuclear Materials Security aimed to review and critique the global stewardship of nuclear materials security in the run-up to the 2014 Nuclear Security Summit in the Hague, Netherlands. The following questions guided the discussion:

- What threatens the security of nuclear materials?
- What is the level of preparedness to address the threat?
- What are the pros and cons of global approaches to securing nuclear materials? Can these impediments be overcome? How?
- What has been and what should be India's role and contributions in the global effort considering India's security and possibly other interests?

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“Gratitude is owed Obama for raising the issue of nuclear materials security”

Ambassador Lalit Mansingh

Former Indian Foreign Secretary

Gratitude is owed to President Obama for raising the issue of nuclear materials security; his 2010 speech at the Nuclear Security Summit raised serious concerns about nuclear terrorism. It was expected at the first Summit that all nuclear material would be secured in the next four years but that has not been possible. Therefore, there is hope that the next meeting in Netherlands will make the task of securing all nuclear materials possible. It must be noted that the IAEA is not formally in-charge of securing nuclear materials. To further the efforts made at the summits, private agencies and studies like the NTI exercise have been undertaken. The NTI Nuclear Materials Security Index 2014 has not been very flattering to India, having placed it at the 23rd position (out of 25 states), behind Pakistan. The index should be seen with a degree of detachment and objectivity, rather than reacting to it with a jingoistic/nationalistic sentiment. The design of the index is flawed. However, although it is loaded against India, there is no reason to decry that India lacks nuclear materials security. An informed



discussion on the index is therefore needed.

There is a need to fine-tune the index to remove biases. The two challenges are to convince the Indian government to take the NTI index seriously and to convince the NTI that their index has flaws that need to be corrected.

With regard to the government of India's response to questions posed by the NTI, it is said that the Ministry of External Affairs (MEA) were not approached by the NTI. The index sourced its data from the IAEA and the EIU. One story goes that the NTI approached the Indian Embassy in the US - an embassy is not a competent authority to verify such data. Moreover, corruption and government stability, which are some of the indicators of nuclear materials security in the NTI Index, are all very subjective and difficult to quantify.

The Indian government has taken a clear-cut position on the NTI Index, which is that it is an exercise by a private entity and the conclusions reached by the NTI are not shared by the former. To play the devil's advocate, if a country's credit rating goes down, it is a calamity. A report such as the NTI Index does not inspire this kind of impact so why should governments take it seriously?

There is a need to fine-tune the index to remove biases. The two challenges are to convince the Indian government to take the NTI index seriously and to convince the NTI that their index has flaws that need to be corrected.

Finally, as an agenda for this discussion, three questions may be posed: what should be India's agenda for NSS 2014? What positive aspects can India project at NSS 2014? What could be the brief design of an alternative nuclear materials security index? Could India undertake this exercise by itself?

“Approximately 1400 tonnes of highly enriched uranium (HEU) and 500 tonnes of plutonium (Pu) are spread around the world ”

Prof R Rajaraman

Emeritus Professor of Theoretical Physics, School of Physical Sciences, Jawaharlal Nehru University & IPCS Distinguished Fellow

Terrorists may want to get a hold of a nuclear bomb, but there is little chance of this actually happening. It is not easy to get hold of nuclear materials particularly fissile material for making a nuclear bomb in secret. Terrorists simply do not have the wherewithal to undertake a secret nuclear bomb-making activity. For instance, centrifuges, reprocessing plants and other logistics cannot be kept hidden. Therefore the best option for terrorist outfits seeking nuclear bombs is to steal one. Also, radiological material is different from nuclear material. The danger of radiological materials is miniscule in comparison with the dangers of nuclear materials. Radiological material is available aplenty and anywhere around the world. Monitoring procedures for both are different. At the Seoul Summit in 2012, there was great pressure to talk about radiological materials because of



the Fukushima accident. Discussion about radiological materials security and nuclear materials security is to be kept strictly separate.

It is unhelpful to talk about how much nuclear material is stocked by states. There is approximately 1400 tonnes of highly enriched uranium (HEU) and 500 tonnes of plutonium (Pu) spread around the world (the largest concentration of HEU is in the US). All that is needed to make a nuclear bomb is 25kg HEU or 5kg Pu. Progress has been made in downgrading nuclear materials – for instance, by the Megatons to Megawatts Programme, Russia has downgraded 500 tonnes of HEU and sold it to the US.

Nuclear materials security does not easily catch the attention of politicians. President Obama indeed brought it to the notice of world leaders and governments. In the international community today, there is a lot more awareness about the issue because of summits and conferences which address nuclear security. Physical security is a serious concern. India had taken care of the physical security of its nuclear materials even before the Summits came up. On the other hand, countries like Japan are yet to bring back approximately 22 tonnes of nuclear fuel from France. Physical transportation can be dangerous.

Disposal of nuclear material and fuel is also a serious problem. HEU can be diluted to LEU but Pu cannot be diluted. There are not enough reactors to burn all the spent nuclear fuel in the world. Thus, there is an effort to convert spent fuel to mixed oxide (MOX) fuel but this has not received much traction. Even the US does not have a well-defined plan for disposing their spent fuel. This will continue to be the case until the right technology for its disposal is developed.

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During the preparation of the NTI Index, no anti-India sentiment was noticed. However, it was observed that there were

doubts about the non-OECD countries' capability to manage their nuclear materials. This was the only bias observed. Prejudices always play a role during such exercises. India too refused to answer NTI's questions, and this is probably when the prejudice developed. The index is no doubt grossly unfair to India. The EIU methodology is extremely methodical; however, they are not experts on nuclear issues. As a consequence, while India was given a zero (on hundred) for not having an independent NSRA, China was given a 100 on 100 for an 'independent' nuclear regulatory authority. Anyone who studies China is aware that to call a Chinese regulatory body independent is highly suspect. The NTI index is therefore a judgemental index.

At the NSS 2014, it is a must for India to project and advertise. India should answer some of the questions thrown at it without appearing accountable and answerable. It should willingly dispel doubts. At the 2014 summit, the Indian government is not offering anything new or more than what it offered at NSS 2012.

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If India undertakes the task of constructing a similar index, the first step would be to avoid thinking of what may hurt India. It would therefore be a difficult exercise, especially since preparing one in the aftermath of having done badly on the NTI Index is damaging to begin with.

“After 9/11, the threat of nuclear terrorism was compounded and magnified”

Ambassador Sheelkant Sharma

Former Permanent Indian Representative to UN offices in Vienna & the IAEA

After the collapse of the USSR, tonnes of nuclear material were lying around in its various satellite states. In the wake of the first Gulf War, Saddam Hussein tried to cheat the NPT and get a hold of nuclear materials. Illicit trafficking of nuclear materials has been a concern for a long time but no international agency was ready to take the responsibility of securing these materials. Specifically, because securing materials involves domestic intelligence, countries refuse to discuss nuclear materials security openly. After 9/11, the threat of nuclear terrorism was compounded and magnified; the suicide



bomber became a fact of life. Senators Nunn and Lugar, in the early Clinton Administration, set up the Cooperative Threat Reduction (CTR) Programme, which worked meticulously with the IAEA as well as bilaterally with Russia. The success story of CTR was that out of the four states which had nuclear materials after the collapse of the USSR, three states became non-nuclear weapons states.

NTI's exercise was a civil society effort to supplement and bolster President Obama's call for nuclear security. The exercise has received accolades and respect in the international system. In the field of nuclear safety and security, the easy and convenient issues get attention and the more difficult issues are left without action. Even the NTI Index only picks out nuclear materials security of all other problems.

The media has a reputation for blowing issues out of proportion. The Indian AEC has been traditionally defensive as a result of all the attacks they have been subjected to for many years. It feels it an imposition to be answerable. The NTI was suggested to talk to Indian officials for the purpose of the index but they indicated 'communication problems'. Moreover, the Indian bureaucracy likes people to be supplicant – this is true of bureaucracies in most other developing countries. Therefore, international efforts at transparency become problematic and instead turn pro-OECD (where the bureaucracies are more mature).

The NSS is a critical process led by the US. The US has completed most of its domestic requirements for dealing with nuclear terrorism and feels that there is need for international cooperation to complete the remaining tasks. There are a diversity of approaches to threat management and perception about sources of threats. Divergences may lead to contentions. Efforts to appease some countries are constantly failing (North Korea is an example).

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The NTI effort should be supported but it should not be treated as exclusive. The five chapters of the index are compensatory (doing unwell in one category can be compensated by doing well in another). The index gives physical protection of nuclear materials only a fraction of marks. These markings require fine-tuning. For instance, it was suggested to the NTI that instead of marks, grades in a sort of bandwidth could be awarded. The index lacks comments which give more credibility to the exercise.

Incidentally, the IAEA database has some 200 cases related to lack of security of nuclear materials and India does not figure in any of these cases. Another interesting point to note is that HEU is easier to steal and easier to make a bomb with than with plutonium – however, the IAEA has demonised plutonium.

Indian PM Manmohan Singh's efforts at the NSS have been on the right track. India can elaborate further on the Centre for Excellence (indicate that courses are being run). India needs to convince the international



community to retain focus on nuclear terrorism because India is threatened by Pakistan's clandestine activities which are hand-in-glove with terrorist outfits.

To encourage engagement with the NTI Index, it must be emphasised that it does not pose a threat to security as NPT did. It may of course show India a certain bad light but is not damaging in any real sense. India has in the past refrained from signing/coming on board with a variety of initiatives – what must be realised is that talking does not compromise security but does compromise reputation.

“Reconciling the imperative for transparency with the needs of secrecy is a major challenge.”

PR Chari

Visiting Professor, IPCS

The MEA cannot be absolved because the NTI did not go through proper channels of communication. Instead, the MEA should have been more proactive. Secrecy in government in India has become the norm and transparency has become the exception. Reconciling the imperative for transparency with the needs of secrecy is a major challenge.

What should be India's role and effort for nuclear materials security? India can now take credit for accepting all international obligations for nuclear materials security. But an independent NSRA is still missing (the bill is stuck in parliament). The Centre for Excellence which was promised at the 2012 summit should become functional. India finances the IAEA – being the agency for supervising nuclear materials safety and security – and this is a logical way to go about it. Further support should be provided to the IAEA in the form of both money and technical personnel since the agency often faces problems in recruiting and keeping technical staff on permanently.

Recent articles in *International Security* indicate growing doubts about whether nuclear terrorism is a real threat. There may be a disproportionate attention to nuclear security and the threat of nuclear terrorism, which stands to deflect attention from other major issues. Nuclear terrorism may be in the realm of the almost impossible but it is a 'low probability, high consequence' event and therefore extremely important.

India cannot be very radical at the NSS and can only build incrementally on what has already been committed. India should fulfil the promises made and give good reasons for not having fulfilled them already. All countries need to ensure whether they have the domestic capabilities to turn brilliant ideas into reality.

Clandestine activities can be conducted despite laws and regulations. There is a need to establish norms for securely transporting nuclear materials from one place to another. Here, reference is being made to Western powers and not the usual suspects charged with illicit nuclear activities. How did Iraq go so far in acquiring nuclear know-how? Many Western governments were colluding in this regard – actual records must therefore be looked at and discussed at the 2014 NSS.

Additionally, the link between nuclear safety and nuclear security must also be highlighted.

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