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Nuclear Security in India: Mapping the Threat Scenario

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Introduction

Post 9/11, the concerns about the use of nuclear and radiological materials by terrorists and other extremists has gained significant international attention leading to processes such as the Nuclear Security Summit. Like other nations, India too acknowledges the seriousness of the threat from nuclear and radiological terrorism, even though the possibility of such a mishap remains low.

India, like other nuclear powers, faces serious threats in the nuclear domain. The Indian Prime Minister's participation at the first two Nuclear Security Summits in Washington, DC and Seoul is a reflection of the importance attached by Delhi to the issue of nuclear security. The neighbourhood in which India is situated is a constant reminder of the ever-changing threat dynamics in South Asia.

India has a strict nuclear security and safety regime, but a few incidents in the past have highlighted certain loopholes in the Indian system. These incidents, however, did not have any links with non-state actors or terrorist groups and thus cannot be categorised as security threats. The poisoning of water with tritium in the Kaiga nuclear power plant and a Cobalt-60 source being found in a scrap market in Mayapuri in 2011 are two such episodes. The Mayapuri incident can be catergorised as an accounting error, rectified thereafter by tightening rules and procedures regarding material accounting, including those followed by universities and research institutions.[1] The Kaiga incident, which involved a disgruntled employee, has been categorised as an "act of mischief."[2] Post these occurences, the Government of India (GoI) responded with policy changes to ensure that such incidents do not occur in the future. However, given the increasing sophistication with which terrorist groups are acting and

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the kind of support such groups have received from external elements, especially in the Indian context, the possibility of nuclear or radiological terrorism remains.

This paper will analyse the possible nuclear and radiological threats that India could face. It will examine the various ways these threats could manifest and the likely actors who could show the inclination to carry them out. This paper is part of a larger ORF research project titled "Nuclear Security in India: Mapping Non-state Actor Threats to India's Nuclear Security". As part of the study, ORF has carried out substantive interviews with various stakeholders in India's nuclear security, including serving and retired security officials, the Department of Atomic Energy, the Atomic Energy Regulatory Board, staff at hospitals and research institutions, and members of the academic and strategic community in India.[3]

Threats to India's Nuclear Security

India has witnessed terrorism or other violent movements, including insurgencies, since its independence. While no terrorist or extremist organisation has used nuclear or radiological materials to carry out an attack or has attacked a nuclear facility, the security establishment in India treats the threat as a possibility, albeit a remote one. Responding to a question in the Indian Parliament, in March 2013, regarding the security of India's nuclear facilities, Mr. V Narayanasamy, the then Minister of State, Prime Minister's Office, said that "though there is no specific security threat...at present, Department of Atomic Energy installations and its residential colonies continue to remain potential targets of outfits and elements inimical to the interest of India."

Theoretically, threats to India's nuclear infrastructure can manifest in the form of a full-scale nuclear detonation; a "dirty bomb" attack; sabotage at facilities by an insider; or an armed assault on a nuclear facility.

Detonation

A full-scale nuclear detonation by a non-state actor remains highly unlikely, although the consequences will be catastrophic. Such an act will require a high level of technical expertise and resources, including equipment, materials and finances. The possibility of terrorist groups, especially those active in India, possessing such capabilities is remote. However, there are those trans-national terror groups which receive external support. Such groups can acquire the capability to carry out such an attack. Also to be noted is the possible assistance networks such as that of A Q Khan that have engaged in proliferation in the past. The other possibility that India may have to factor relates to the recent reports about Pakistan developing tactical nuclear weapons (TNW). The very nature of these weapon systems suggests that they need to be deployed at the level of theatre-level commanders. While it is certain that Pakistan will exert great control over these weapons, possibilities involving theft of such weapon systems by terrorist groups cannot be dismissed. Even as these are low-probable

incidents, the high-impact value of such incidents should demand greater attention from intelligence and security agencies in beefing up security measures.

Dirty Bomb

The radiological dispersal device (RDD) or "dirty bomb" remains the easiest method to carry out a nuclear strike, given that it packs a conventional device with nuclear and radiological materials. These, in turn, are also easily available, thus making it a relatively more feasible option even for non-state actors. Indeed, the radioactive materials in RDDs are widely used "in medicine, agriculture, industry and research, and are easier to obtain than weapons-grade uranium or plutonium."[4] A "dirty bomb" attack can be carried out in public places such as markets, bus or train stations, and airports. While the blast itself will result in few deaths, it will attract immense international and national media attention, create panic among the public and dent the government's image. It is believed that this method is likely to be of particular interest to terrorists as it requires limited technical knowledge to develop and deploy compared to a nuclear device.

Sabotage by an Insider

Sabotage by an insider or an insider threat can be categorised as one of the probable threats India faces when it comes to nuclear security. The incident which occurred in Kaiga is an example of how a disgruntled employee, acting alone or in collusion with others (including outsiders), can harm India's nuclear infrastructure.

The use of cyber technologies to inflict damage or sabotage a facility by an insider also remains a possibility. There has been a trend wherein educated persons including those with IT skills have joined the ranks of known terrorist groups such as the Indian Mujahideen (IM). The IM had, in the past, recruited persons with IT background to encrypt communications and hack wireless networks. The arrest of Mohammed Mansoor Peerbhouy in 2008 is a case in point.[5]

The heavy reliance on computer-aided systems to operate nuclear plants and security mechanism amplifies the threat. The "Stuxnet" attack on Iranian nuclear facilities, which reportedly resulted in delaying the Iranian nuclear programme by a few years, highlights the kind of threats that nuclear installations can face through the cyber realm.

Armed raid or an Assault

There is a possibility of terrorists attempting to halt operations of a nuclear facility in India by physically attacking the site. Such an attack can be carried out by terrorists trained in carrying out a sustained commando-style assault or a raid. These attacks can also be carried out with an intention of stealing nuclear or radiological material which could be used at a later stage. However, given the

demonstrated vigilance, both on-site and off, as well as at the entry and exit points at the facilities, it becomes next to impossible to acquire such material and execute such attacks.

Even as the ground-level security measures at nuclear installations are quite stringent, India could be vulnerable from an air assault. After the September 2001 terror attack showcased the ability of terror groups to carry out attacks from the air, there is concern that a terror group could hijack a fully fuelled civilian aircraft and crash it in a nuclear facility. This could create massive physical destruction of the complex, in addition to spreading radiation beyond the complex to the larger public. India's preparedness against such an air attack has remained debatable. While this is not a unique threat to India, its neighbourhood compounds the challenges. Thus, India will have to consider ways of securing its nuclear facilities from these vulnerabilities.

Where can the threats come from?

Threats to India's nuclear establishment can manifest from within India's borders or from groups based outside the country. From the inside, threats can come primarily from groups such as the IM and the left-wing extremists (LWEs) or Naxals. These groups, particularly the IM, could receive support from external elements to plan and execute an attack on an Indian nuclear installation or to detonate a nuclear bomb or RDD.

Indian security agencies are of the view that groups such as the IM currently do not possess the capability or the capacity to carry out a full-scale nuclear attack or RDD attack. Traditionally, the IM has been carrying out serial bombings, which require very little resources and skills as compared to those that are required for carrying out a nuclear or radiological attack. Moreover, the IM has never demonstrated the capability to carry out commando-style raids or assaults.

Even as the IM lacks the ability to carry out such an attack, it has shown the intent to use a nuclear weapon on Indian soil should it acquire necessary wherewithal. According to the statement of one of the IM's top leaders, Yasin Bhatkal, during his interrogation, the IM had in the past pondered over the possibility of carrying out a nuclear or radiological attack with external assistance. While discussing the possibility of acquiring a small nuclear bomb from Pakistan, Riyaz Bhatkal, another IM leader based in Pakistan, had stated that "[a]nything can be arranged in Pakistan."[6] Yasin Bhatkal had further told officials that "Riyaz told me that attacks can be done with nuclear bombs. I requested him to look for one nuclear bomb for Surat."[7] While analysts argue that these statements do not reflect the capability of the group to actually carry out such an attack, the confession highlights the fact that the IM had considered using a nuclear device. Such a threat cannot be taken lightly.

When it comes to the threat posed by the LWEs to India's nuclear security, there are differing views within the strategic community. One section argues that the LWEs will not attack a nuclear facility given that large-scale damage will be a consequence affecting the general public. LWE is also driven by different ideologies, and an attack on nuclear facilities or a nuclear attack will only hurt their interests.

On the other hand, analysts have argued that there exists Naxal literature, which indicates the existence of such a threat.[8]

Among the groups that are active outside India's borders, the Lashkar-e-Taiyyaba (LeT) has shown the capability to carry out commando-style operations on Indian soil (Mumbai 26/11). These groups, with adequate training from their handlers in Pakistan, can achieve the level of expertise required to target a nuclear installation in India. However, a counter argument is that the Pakistani establishment will not knowingly allow the threshold of its proxy war to rise to the nuclear level.

At the same time, doubts have been expressed about the ability of the Pakistani establishment to keep control over its "assets." There has also been a trend where terrorist groups are interacting with each other, sharing resources and conducting training. Moreover, there have been many incidents in the recent past where terrorist groups have attacked Pakistani military bases speculated to have some sort of nuclear role.[9] While discussing the terrorist threats to Pakistan's nuclear weapons, Prof. Shaun Gregory argues that terrorists have shown the "ability to penetrate security around the approaches to hardened military targets (including some thought to have nuclear roles) at the missile storage facility at Sargodha (November 2007), the aerospace complex at Kamra (December 2007), and munitions complex at Wah (August 2008) and subsequent attacks which have demonstrated the capacity to go further to penetrate base perimeters and – crucially – to hold space within those bases for many hours, including the attacks on the Pakistan Army's GHQ (October 2009), the Pakistan naval base at Mehran (May 2011), and at Kamra again (August 2012)".[10] Therefore, a terrorist group, in collusion with the Pakistani military or acting alone, inflicting serious damage to the security establishment in India, is highly likely. This also demonstrates the ability of terrorist groups active in Pakistan to breach highly secured perimeters in India.

Conclusion

While there have been safety- and accounting-related incidents such as the Mayapuri and Kaiga ones, there have been measures taken to ensure that such incidents are not repeated. Indian security agencies believe that no terrorist organisation or non-state actor has the capability to carry out an attack that could be classified as a nuclear or radiological incident. With ever-increasing access to knowledge through the proliferation of the Internet and rising sophistication of attacks carried out by terrorist groups across the world, the nuclear and radiological terrorism threat is likely to gain further prominence. The situation becomes worse when cases of cooperation between international terrorist organisations are taken into account. Such possibilities are not entirely ruled out by India's nuclear security establishment.

Even as the atomic energy and security establishments are live to these threats and vulnerabilities, more often than not, other immediate day-to-day concerns are accorded higher priority. This prioritisation is further reflected in the allocation of resources, both financial and human, as well as in planning strategies. For instance, states such as Andhra Pradesh that is preoccupied in fighting

Naxalism on a daily basis find it difficult to do justice to the issue of nuclear and radiological terrorism. State security agencies are also often preoccupied with political intelligence, which is again a lacuna in the Indian threat assessment approach.

ABOUT THE AUTHOR

Rahul Prakash was till recently a Junior Fellow at Observer Research Foundation. His research interests include technology and security, Chemical, Biological, Radiological and Nuclear (CBRN) issues and security developments in Asia. He has co-authored a report on *Chemical, Biological and Radiological Materials: An Analysis of Security Risks and Terrorist Threats in India,* an outcome of a joint study conducted by ORF and the London-based Royal United Services Institute.

1. The Mayapuri incident involved a Cobalt-60 source being found in scrap market in the Mayapuri area of Delhi. The source belonged to the Chemistry Department of the Delhi University, which was procured from Canada in 1968 and was not in use since 1985. Punitive measures were taken against those responsible for the negligence. For more, see "Six DU professors charged in Mayapuri radiation case", NDTV, September 02, 2011, available at http://www.ndtv.com/article/cities/six-du-professors-charged-in-mayapuri-radiation-case-130991.
2. The Kaiga incident involved poisoning of drinking water tank inside the plant. However, this is more of a case of mischief thank anything serious. For details, see "Kaiga tritium leak, still a mystery: IGP", The Times of India, December 14, 2011, available at http://timesofindia.indiatimes.com/city/mangalore/Kaiga-tritium-leak-still-a-mystery-IGP/articleshow/11109839.cms?referral=PM.
3. Government of India, Department of Atomic Energy, "Security Threat to Kudankulam Power Plant", Lok Sabha, Unstarred Question No. 2626, available at http://dae.nic.in/writereaddata/parl/bud2013/lsus2626.pdf
4. "Radiological Dispersion Device (RDD)", defined in www.ready.gov, a US Government public service advertising (PSA) campaign designed to educate and empower Americans to prepare for and respond to emergencies including natural and man-made disasters.
5. "Mansoor Peerbhoy: An Unlikely Jihadi, he Shows no Remorse", The Times of India, October 07, 2008, available at http://timesofindia.indiatimes.com/india/Mansoor-Peerbhoy-An-unlikely-jihadi-he-shows-no-remorse/articleshow/3567756.cms.
6. Neeraj Chauhan, "Indian Mujahideen wanted to nuke Surat, Yasin Bhatkal tells cops", The Times of India, December 30, 2014, available at http://timesofindia.indiatimes.com/india/Indian-Mujahideen-wanted-to-nuke-Surat-Yasin-Bhatkal-tells-cops/articleshow/28116663.cms.
7. Ibid
8. Based on interviews with senior police officials in Rajasthan, May 2014.
9. Shaun Gregory, "The Terrorist Threat to Nuclear Weapons in Pakistan", European Leadership Network, June 04, 2013.
10. Ibid

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