

The threat of nuclear proliferation amongst non-state actors in Asia *

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That non-state actors – primarily terrorists or other groups using violence for their political ends – would want to acquire nuclear weapons is a highly contentious assumption. Nuclear weapons are difficult to manage and given the political agenda of the non-state actors in question, may have such a devastating destructive effect that the end for which they were to be used would be destroyed. Also, small nukes have still to be perfected even by the US in the sense that they want to resume nuclear testing post-9/11, especially in the context of such weapons – as reflected in the Nuclear Posture Review of 2002. In addition, purely from the operational point of view, in the context of terrorism, the target and victim are separate entities and destruction of the victim is intended to send a message to the target. But with the fallout from the use of nuclear weapons, the separation will be difficult to sustain. Even more important, one has to remember that terrorists are on the move and have a mobile strategic doctrine. Nuclear weapons are not like guns or other small conventional arms that can simply be carried around endlessly. Nor can the nuts and bolts of nuclear weapons be acquired locally so that the weapon can be assembled wherever the non-state actors happen to be placed at any given time. So, logic suggests that nuclear weapons would not be a weapon of choice for terrorists. This is not to say that other WMD, especially chemical weapons, as happened in Japan in the 90s (see details below), do not hold an attraction for terrorist groups.

Finally, terrorists already have access to enough destructive capability within conventional means, so their need for nuclear weapons is simply not there. In fact, the manner in which the US is conducting its global war on terror, with a focus on a military-centric strategy, it is itself creating increasing space for terrorists across the globe – instead of denying them space.

Nor have any of the known terrorist organisations shown an inclination to acquire these weapons. Otherwise, would they not have approached the now infamous private sector network of nuclear technology suppliers – stretching from Europe to Asia – for acquisition of this technology? As it is, the alleged purchasers of this technology were states themselves, just as other states acquired similar technology from developed states, like the case of Israel and the record of proliferation to it of sensitive nuclear technology and materials from the US.

From my vantage point, this whole cacophony of non-state actors seeking and acquiring nuclear weapons, that has arisen from the US and been taken up by its allies, is more a strategy of victimising particular states, seen as untrustworthy in terms of loyalty to the US and its interests, who are looking to independence in civil nuclear power capability or who have acquired nuclear weapons capability.¹ So, let me state at the outset, that in my view non-state actors are not a major concern in the nuclear proliferation context. However, nuclear installations can be targeted by non-state actors, which is why there are related issues that should be of concern to all states with nuclear facilities – civil and/or military. These are issues of nuclear safety, missing fissile material and illicit trafficking of the same. The issue of safety of nuclear installations is especially critical in terms of sabotage. So far, major reported nuclear installation accidents have occurred in the former Soviet Union and in the US. Where does Asia stand in relation to these issues?

Of the 44 states who are recognised as having nuclear research reactors and whose ratification is required for the operationalisation of the CTBT, 10 are located in Asia – if one leaves out Turkey and Israel. Of these ten states, four, if one counts North Korea, are nuclear weapon states and another has a substantive nuclear capability including a large fast breeder and reprocessing capacity. Barring a few reported incidents of leakage or radiation in the early stages of the development of some of these countries' nuclear programmes, no major accident has occurred in Asia similar to Three Mile Island or Chernobyl.

China, Japan and India have by far the largest nuclear programmes in Asia. Like the US and Russia, China has also had to contend with some safety issues in terms of its nuclear plants. The New York Times, citing China Daily, reported in August, 1989, that the Chinese government reported 20 people

killed and more than 1,200 injured in accidents involving radioactive materials in China between 1980 and 1985.² Again, in July 1999, BBC reported that Chinese nuclear officials admitted that an accident a year ago at the country's first home-grown nuclear power plant had left it crippled for more than 12 months. The 300 megawatt Qinshan 1 plant in Zhejiang province was shut down in July 1998 after what one nuclear safety official described as a "welding problem".³

Nuclear safety issues have been more acute in Japan which has had a series of nuclear accidents – as recent as July 2007. The following incidents relating to nuclear safety issues in Japan once again highlights the fact that so far globally it is the more developed industrial states that seem to have had more extensive safety problems in terms of their nuclear installations. According to the record on the Greenpeace web site, between 1975-1995, the following nuclear accidents took place in Japan:

- 1975: Release of radioactivity from Japan's Mihama nuclear power plant.
- 1979: Two workers suffer radioactive contamination at Japan's Tokaimura nuclear complex.
- 1986: Twelve people receive "slight" plutonium contamination while inspecting a store room at the Tokaimura nuclear complex.
- 1991: Rupture of steam generator pipe causes release of radioactivity at Mihama nuclear power plant.
- 1991: Reactor shut-down due to break of control system at Japan's Sendai nuclear power plant.
- 1991: Release of radioactivity from Japan's Fukui nuclear power plant.
- 1993: High pressure steam accident kills one worker and injures two others at Japan's Fukushima nuclear power plant.
- 1995: Fire due to leakage of sodium coolant from the Monju fast breeder reactor. The Japanese nuclear industry attempted to cover up the full extent of the accident and the reactor was shut-down.⁴

Also, on September 30, 1999, an accident at a uranium-processing facility in Tokaimura, 70 miles northeast of Tokyo occurred. The accident was triggered when three workers used too much uranium to make fuel and set off an uncontrolled atomic reaction. A total of 439 people, including nearby residents, were believed to have been exposed to radiation.⁵ Again, days after an earthquake, on July 24, 2000, the Tokyo Electric Power Company found 29 gallons of radioactive water leaking from a nuclear reactor at the Fukushima No. 1 plant in northern Japan.⁶ The story repeated itself on September 17, 2003 when officials at the Chubu Electric Power's Hamaoka plant in central Japan discovered that about 1.6 gallons of radioactive water had leaked from one of the reactors. In November 2001, the same reactor was shut down after two radioactive leaks occurred within three days.⁷ Even more disturbing was the fatal accident that took place at the Mihama plant on August 29, 2004, killing at least four people. There was no leak of radioactivity, but it was the deadliest accident in a catalogue of nuclear scandals in Japan. Seven workers were also injured due to the steam leak, possibly caused by a lack of cooling water in the reactor.⁸ These safety problems have continued to haunt Japan's nuclear facilities and only last summer, in July 2007, Japan had to suspend operations at the nuclear plant near Kashiwazaki, after a radiation leak and other damage from a deadly earthquake raised new concerns about the safety of the nation's accident-plagued nuclear industry.⁹

Despite being a signatory to the NPT, because Japan continues to expand its civil nuclear base, issues of safety will be a source of concern within its immediate Asian neighbourhood. Moreover, in the context of the threat of nuclear terror from non-state actors, Japan can be extremely vulnerable because it was in Japan that chemical weapons terrorist attacks took place in 1994 and 1995 by a group calling itself Aum Shinrikyo.¹⁰

In June 1994 an incident of a Sarin gas attack took place in Tokyo's Matsumoto prefecture and initially the suspect was seen as one of the victims of the attack in which seven people were killed and 200 injured. However, after the Tokyo subway terrorist incident in March 1995, the Aum Shinrikyo group was

held responsible for the earlier attack also. In the subway incident, the group released Sarin gas in five coordinated attacks in peak morning rush hour killing 12 commuters and injuring 1,034.¹¹

Apart from Japan, the use of chemical terrorism by non-state actors has only been either in the context of various suspected anthrax attacks primarily in the US post-9/11, or in Iraq in October 2006 when a terrorist detonated a car bomb which also contained two 100 pound chlorine tanks and in 2007 there were apparently¹² documented uses of chlorine gas in both suicide attacks and car bombs in Iraq.¹² However, no such incidents involving non-state actors have been collated in the highly volatile region of West and South Asia.

In the Indian context, the fast pace and largely indigenous inputs into its nuclear facilities did create some safety issues in the early decades. For instance, according to an Indian parliamentary report, 147 mishaps or safety-related unusual occurrences were reported between 1995-1998 in Indian atomic energy plants.¹³ Of these, 28 were of an acute nature and nine of these 28 occurred in the nuclear power installations.¹⁴ In a paper presented at the IDSA, New Delhi, on October 10, 1988, Leventhal and Chellaney pointed to structural design and operational problems that were troubling India at that time.¹⁵ In the context of nuclear material theft, the last reported uranium theft was on August 27, 2001 when police in West Bengal revealed that they had arrested two men with more than 200 grams of semi-processed uranium. According to Indian press reports, Indian intelligence officials believed that a uranium smuggling gang was operating in West Bengal.¹⁶ Earlier, there had also been reports of seizure of stolen uranium from hospitals in India, especially from scrap buyers.¹⁷

However, on all these counts it would appear that as the Indian programme has evolved, especially post-1998, there have been no reports of major safety issues within India's nuclear facilities or of any theft of material post-2001. Additionally, the Indian government enacted its law, 'The Weapon of Mass Destruction and Their Delivery System (Prohibition of Unlawful Activities) Act 2005', a year and a half after the adoption of UNSCR 1540 and in the backdrop of the NPT Review Conference 2005. This law covers all those areas which are required to be taken care of as national obligations under UNSCR 1540 (production, possession, transportation, stockpiling and exports etc).

In the case of Pakistan, which has a much smaller nuclear programme, there have been no reported safety or theft issues. On the civilian side, all its reactors are subject to IAEA safeguards, thereby adding to the safety dimension. As for the international network of individuals – ranging from Europe to Asia – and allegedly selling nuclear "secrets", regardless of the controversy this issue continues to arouse, it has to be remembered that the buyers were all states and governments, not non-state actors. Nor has any report been published regarding any non-state actor having sought access to this network.

After the 1998 tests, both Pakistan and India have made public their command authorities and other security measures including antiproliferation measures. In the context of Pakistan, after the country went overtly nuclear, it began putting in place strong command and control mechanisms. Operational freedom for scientists involved in the nuclear programme was also brought under strict supervision and control. The removal of Dr Khan in March 2001 from his position at KRL was the most visible proof of this new approach towards nuclear issues. Even more important, a systematic set of laws and regulations have now evolved in terms of nonproliferation and institutional controls over the military and civilian nuclear programmes. So far, there have also been no reports of any nuclear accidents or other safety and fissile material related problems, despite intense international scrutiny and observation of Pakistan's nuclear programmes, especially post-May 1998.

In an effort to allay international concerns about the safety of its nuclear assets, Pakistan has periodically briefed local and foreign media as well as diplomats in detail about its command and control authority as well as the management structures. The latest briefing in this connection was held in January 2008 and amongst the invitees were representatives of the Indian media and the Indian defence attaché based in Islamabad. So far no other nuclear weapon state has been so open about its command and control structures. That the Western media and some Western leaders continue to raise the bogey of Pakistan's nuclear assets within the context of safety, has little to do with the safety issue itself and more to do with the general non-acceptance within the Western mindset of a Muslim nuclear weapon state. Otherwise, going by historical record, even within the proliferation context, the record of other states at the official levels is far worse (See Strategic Studies, Vol. XXIV, Spring 2004, No.1).

Pakistan's National Command Authority (NCA) evolved informally in 1999 and was formally set up in February 2000; and the Nuclear Regulatory Authority for civilian nuclear matters was set up in 2001. Pakistan's Export Control Act 2004 was enacted in September 2004, after four years of extensive inter-ministerial processes starting 2000, in keeping with UNSCR Resolution 1540 which had been adopted in April 2004. This Act is in addition to other national laws, which are applicable to offences other than export controls. The list of such laws is part of NCA Ordinance 2007. The NCA Ordinance was promulgated to provide stronger legal cover instead of simply an administrative authority under which the NCA was functioning since 2000. The NCA Ordinance enhances the safety and security of Pakistan's nuclear programme by providing explicit provisions with regard to physical security, investigation and prosecution of any violation of the Ordinance and other national law included in its schedule.

The Pakistan's Export Control Act 2004, while it does not mention the terrorists through the explicit use of the term, it effectively does cover non-state actors through the preamble and Article I, which lays down the extent of its application.¹⁸ The Indian law in this regard mentions non-state actor/terrorist in its preamble and Section – 4 (g) & (m), which defines certain terms used in the Act.

Explicitly not mentioning the non-state actors/terrorist in Pakistan Export Control Act – 2004, thus is not an omission or a shortfall, as it does cover the possibility of export to unauthorized persons. This view has also been sufficiently highlighted in Pakistan's Report to UNSCR – 1540 Committee.

All in all, it is certainly not in nuclearised South Asia where the issues of command and control and nuclear safety are a problem – despite the political rhetoric coming out especially against Pakistan's nuclear capability. The facts on the ground reveal that the real threat of weak command and control as well as serious safety issues really arise in the West, especially in the US.

Recently, there was the horrifying revelation that a US B52 bomber flew across the US carrying six nuclear-armed cruise missiles which led to a "bent Spear" alert – a code for an incident involving live nuclear weapons. Each of these W80 nuclear warheads had the destructive power of 10 Hiroshima bombs. According to the published data, the nukes were "lost" for 36 hours after the plane took off on August 29, 2007, from a base in North Dakota. So while Western, including US, analysts raise the bogey of the possibility of "loose nukes" in Pakistan in an almost hysterical fashion, we already have the reality of loose nukes in the US.

What is even more disturbing about these loose US nukes is the lack of security that seems to surround US nuclear weapons. Apparently, according to reports,¹⁹ the US airmen had replaced official procedures for handling these missiles with an "informally devised plan of their own". Given the extremists and psychologically disturbed personnel within the US military – remember Abu Ghraib – and the tendency of the US to bring in the private sector into the management of security, the international community should have some contingency plan to prevent the loose nukes incident being repeated again in the US. The danger is even more acute because religious extremists in the form of born-again Christians actually hold office in that country.

Nor is the nuclear safety problem in the US only related to loose nukes though that is certainly at the top of the threat spectrum. The other serious issue relating to US nuclear safety is of missing fissile and other nuclear-related material – especially since unlike in Pakistan, in the US the private sector is a major part of the nuclear industry. Even a cursory look at the disappearance of nuclear-related material from US facilities should be enough to show the threat of nuclear proliferation in terms of non-state actors.

For instance, between 1957 and 1965, 100 kilograms of uranium 235 disappeared from a nuclear recycling plant in Apollo, Pennsylvania. This was weapons grade material and enough to produce more than one bomb. The president of the firm was reported to have close ties with Israel, but the mystery of the disappearance of this fissile material was never solved.²⁰

Nor was this a one-off incident. Again, in 1979, nine kilo-grams of weapons grade uranium was found missing from a nuclear fuel plant in Erwin, Tennessee.²¹ In July 2004, an inventory of US classified weapons data revealed that four hard disk drives were missing. While two of the drives were subsequently found to have been improperly moved to a different building, the two others remained unaccounted for. Then, on October 26, 2006, the BBC reported that the FBI is investigating whether

information from a US nuclear weapons laboratory was found in a police drugs search of a New Mexico trailer park. According to police officials, the material and classified information recovered during the search appeared to have come from the Los Alamos National Laboratory. Earlier, in August 2006, it had been revealed that the lab had released sensitive nuclear research data by email. Interestingly, in an ABC News report in October 2005, Christopher Steele, the senior safety officer of the US government's nuclear weapons laboratory in Los Alamos, New Mexico, had stated that he could not vouch for the safety of this facility. According to Steele, the equivalent of 5,000 pounds of plutonium in barrels of radioactive waste was being stored outside the laboratory under a tent. Also, March to April 2005, in New Jersey, a package containing 3.3 g of Highly Enriched Uranium (HEU) was inadvertently disposed of. Finally, the US has also led the field in nuclear proliferation – and not simply in the form of US citizens but the state itself, and the beneficiary was primarily Israel.

This is not all. The British and Americans, who have tried to make themselves out as champions against WMD and staked so much on this issue, are themselves in cahoots on WMD build up and proliferation – the latter from the US to Britain. And all this is under the legal cover of their 1958 Mutual Defence Agreement which the US Congress has renewed every ten years. The US supplies of WMD to Britain are crucial to Britain's support for US policy and WMD exports to the UK include Trident D5 missiles and nuclear weapons components and technology. For years, Britain has also exploded its nuclear weapons at the Nevada test site in the USA. In September 1994, Greenpeace had released a report documenting the US government's violations of domestic law and international treaty obligations by transferring "sensitive nuclear technology" to Japan. The report, entitled, "The Unlawful Plutonium Alliance," revealed that the US Department of Energy had negotiated an agreement in 1987 which allowed for the transfer of advanced plutonium separation or "reprocessing" technology to Japan. In the face of this evidence, which is merely a tip of the iceberg, and by its own judgemental standards, the threat of proliferation of WMD comes primarily from the US.

This is not to say that more cannot be done to strengthen the presumption against proliferation. As to how this can be done, the following are some pointers towards this end.

- The international community has to move away from the increasingly discriminatory approach that seems to have been set in motion by the US. In the context of the NPT, there is also a need to update it in keeping with ground realities. In other words, Pakistan and India need to be accommodated within the NPT as nuclear weapon states, which means altering Article IX of the Treaty. The provision for this is there in the context of the Review Conference provision but if that is not possible then an Additional Protocol can be attached to the NPT to be signed by Pakistan and India which allows them to accept the rights and obligations of nuclear weapon states within the context of non-proliferation. After all, the NPT has already added to its safeguard provisions an Additional Safeguards Protocol. The argument that accepting the South Asian states as nuclear weapons powers will open the floodgates to proliferation is also incorrect since barring these two states and Israel all other states have become parties to the NPT. The case of Israel is different from Pakistan and India because it has yet to admit its nuclear status overtly.
- Country-specific accommodations will undermine the IAEA safeguards provisions as well as the NSG guidelines. Therefore, a principle-based approach is required in both these contexts.
- The difference in the approaches adopted towards North Korea (accommodative) and Iran (non-accommodative) will not only undermine non-proliferation but also international security.
- There is a need to focus on the wider context of arms control also, especially conventional arms control which seems to have gone out of the international radar screen altogether despite the increasingly devastating PGMs and other weapon systems.
- The uniqueness of nuclear weapons must not be compromised and therefore it is essential to keep the nuclear issues separate from other WMD issues.
- Most important, as the energy security issue becomes a central part of the strategic stability equation, there is a need to provide cheaper and easier access to civil nuclear technology and reactors to developing states with limited energy resources. In this context, the IAEA proposal for

nuclear fuel banks needs to be given more serious attention. In the same context, multilateral nuclear fuel centres and plants at regional and sub regional levels needs to be explored with a strict control over sensitive technologies.

- As for the issue of non-state actors acquiring nuclear technology or the wherewithal for making nuclear bombs, this fear, though it cannot be discounted, is much overplayed. Terrorists do not need nuclear weapons when lethal conventional weapons, including WMD, are more viable alternatives. However, knowledge regarding securing of nuclear weapons and facilities should be available to all states with no quid pro quos in terms of access-seeking. Perhaps an international body like the IAEA could be created for this purpose with personnel carefully chosen from non-nuclear states with a strong commitment to nuclear disarmament.

At the end of the day, it needs to be remembered that acquiring nuclear technology is becoming increasingly a matter of political will rather than technological capability. That is why it is the presumption against proliferation that needs to be strengthened. For that, a more non-discriminatory approach is required. Equally important is the need for specialised agencies like the IAEA to take the lead in the implementation of non-proliferation instrumentalities that have been created through international political consensus.

References

* This is an abbreviated version of a more detailed paper presented at a conference on Asian Security in 21st Century, at the IDSA, New Delhi 5-7 February, 2008.

1. The sheer absurdity of the US position was highlighted in November 2007 at the East West Dialogue in Barcelona organized by Casa Asia through the statement made by William Perry, former Defence Secretary of the US (1994-97) as a member of a panel on The Nuclear Debate. He declared that there was a very real nuclear threat to the US Homeland from non-state actors in Afghanistan/Pakistan. When I asked him that even if we were to assume rather absurdly that these actors had acquired a nuclear weapon how would they target the US homeland from West Asia – by sending the bomb through mail or having a courier carry it through all the security checks into the US? After all, traditional delivery systems would imply the use of an ICBM which event he states of the region had not acquired yet. At this, he retorted that he envisaged a terrorist nuclear attack to be carried out by a non-state actor using a truck as the delivery vehicle! On hearing this, I advised him to then look to home grown terrorists within the US and the safety of US nuclear installations.
2. "China Lists 20 Deaths in Nuclear Accidents," The New York Times, 6 August, 1989.
3. "Chinese Nuclear Accident Revealed," BBC, 5 July, 1999.
4. Calendar of Nuclear Accidents and Events, Greenpeace, <http://archive.greenpeace.org/comms/nukes/chernob/rep02.html>
5. www.atomicarchive.com/Reports/Japan/index.shtml
6. "Japan Nuclear Accident Glance," USA Today, 17 July, 2007.
7. Ibid.
8. "Accident at Japan nuclear plant", Greenpeace, 9 August, 2004, www.greenpeace.org/international/news/accident-at-japan-nuclear-plan
9. "Japan Shuts Nuclear Power Plant after leak", The New York Times, 18 July, 2007.
10. 'Aum' is from the Hindi word meaning universe and the Japanese word 'Shinrikyo' means religion of truth. This group was founded by Shoko Asahara and as of 2004 it has about 2000 members. Presently it is on the US terrorist groups' list.

11. The attacks were directed at trains passing through areas of Tokyo that serve as the seat of the national government. Ten men perpetrated the attack – 5 of whom released the gas and the other five served as getaway drivers. The 5 men involved in the attack carried 2 packages containing sarin and umbrellas with sharpened tips, dropping the packages on appointed trains they then punctured holes in the packages which released the sarin into the environment, after which they disembarked and got into getaway cars. This was the more famous of the two Sarin attacks because it was in the process of investigating this incident that the nature of the organization, now labelled 'terrorist', was revealed. Sarin's only application is that of a nerve agent and is classified by the UN as a 'weapon of mass destruction' through UN resolution 687. Though it is colloquially referred as a gas at room temperature it is an odourless colourless liquid. Production and stockpiling of Sarin was made illegal by the chemical weapons convention of 1993. Even at very low concentrations Sarin gas can be fatal causing death in minutes. It is 500 times more toxic than cyanide.
12. Data collated from the following sites: www.msnbc.msn.com/id/17254507;
http://news.bbc.co.uk/2/hi/middle_east/6385033.stm; <http://edition.cnn.com/2007/WORLD/meast/02/22/iraq.main/>
13. Ritu Sarin, 'Hunt for yellow cake', The Indian Express, 4 June, 1998, see e.g. www.expresidia.com
14. Ibid.
15. Paul Leventhal & Brahma Chellaney, 'Nuclear Terrorism: Threat, Perception and Response in South Asia'.
16. 'Uranium smugglers caught in India', news.bbc.co.uk/1/hi/English/world/south_asia/newsid_1512000/1512077.stm
17. For details, derived from international and Indian sources, of nuclear safety and theft of nuclear material in the context of India, see Mazari & Sultan, "Nuclear Safety & Terrorism: A Case Study of India", Islamabad Paper No. 19, ISSI, November 2001.
18. (1) this Act maybe called the Export Control on Goods, Technologies, Material and Equipment related to Nuclear and Biological Weapons and their Delivery Systems Act, 2004.
(2) It extends to the whole of Pakistan
(3) it applies to –
 - (a) every citizen of Pakistan or a person in the service of Pakistan within and beyond Pakistan or any Pakistani visiting or working abroad;
 - (b) any foreign national while in the territories of Pakistan; and
 - (c) any ground transport, ship or aircraft registered in Pakistan wherever it may be.See *The Gazette of Pakistan*, Islamabad, Monday, 27 September, 2004.
19. "US hits panic button as air force 'loses' nuclear missiles", Sunday Times, 21 October, 2007.
20. Chronology of Fissile Material Theft, Nuclear Files, [www.nuclearfiles.org/ menu/key-issues/nuclear-weapons/issues/proliferation/chronology-fissile material-theft.htm](http://www.nuclearfiles.org/menu/key-issues/nuclear-weapons/issues/proliferation/chronology-fissile-material-theft.htm)
21. Ibid