Pakistan

Security issues concerning Pakistan’s nuclear arsenal

Hans Schippers

In late May 2011 six combatants of the Pakistani Taliban attacked a marine-airport base close to the harbour city of Karachi. Only after heavy fighting were Pakistani forces able to overpower the attackers. Four were killed, two escaped. In the attack, the Pakistani army lost ten of its men and seventeen were injured. Two valuable reconnaissance planes went up in flames. It is generally assumed that the attackers got help from the inside.

The attack was worrying because presumably the marine base functioned as a storage facility for nuclear weapons. Several days after the attack a representative of the Taliban, however, denied that they had been after those weapons. This charge would be used by the United States to pressure the Pakistani army into fighting the Taliban. “Pakistan is the only Muslim nuclear-power state” the spokesman told a Wall Street Journal reporter, and the Taliban are not trying to change that. The aim of the movement is “to take over Pakistan, and its weapons.”

This announcement would probably not have reassured Western nuclear- and defence-experts. When the Taliban has the opportunity to get their hands on a nuclear weapon, it is believed they will not hesitate to do so. Moreover, besides the Taliban there are at least a dozen other terrorist groups, such as Al Qaeda, who are seeking nuclear weapons.

This article examines the security situation concerning the Pakistani nuclear arsenal. First and foremost it will focus on the physical safety measures taken to protect those weapons. Also of great importance is the relationship with the United States, an ‘ally’ which has invested a lot of money in equipment and in the training and education of security personnel. The article starts with an analysis of the political context in which Pakistani nuclear armament took place and a description of the advancement of the nuclear arsenal and the radicalization of the country.

Hereditary enemy India

The foreign and defence policy of the Pakistani government is to a large extent determined by its relations with its neighbour India. The country was established in 1947 when the Islamic federal states of British-India declared their independence. Due to the mixed population of the states the separation was far from peaceful. A civil war broke out between the Muslim minority and Hindu majority in India, resulting in hundreds of thousands of deaths. Millions of people had to flee their homes and settle elsewhere.

The Hindu rulers of the largely Islamic state Jammu and Kashmir chose to join India, which led to the occupation of the state by Kashmiri and Pakistani troops. After India also deployed its troops the UN decided to divide the state along the battle lines whereby India ended up getting the largest part. Hence, Kashmir has remained a source of tension, resulting in another war in 1965 after Pakistani infiltration attempts.
In 1971 not Kashmir, but the Bengali part of Pakistan became the cause of a war. This eastern part of Pakistan, which felt discriminated against by the country’s western provinces, had been troubled by unrest for years in part due to Indian agitation. When the Awami League, which strived for independence, won the elections, a rebellion broke out. The fighting resulted in millions of Bengali refugees fleeing to India, which came to the rescue of the Awami League. The Pakistani army was eventually forced to capitulate. Eastern-Pakistan gained independence under the name Bangladesh.

A fourth Indo-Pakistani war erupted in 1999, again in Kashmir, where Pakistani infiltrators occupied an Indian border district. India reacted with a military offensive which forced Pakistan to withdraw its troops from the region.2

**Nuclear weapons as compensation**

Although most Pakistani military adventures did not meet with success, the loss of Bangladesh was especially painful. In January 1972, shortly after the lost war, the then Prime Minister Zulfikar Ali Bhutto arranged a meeting with a group of atomic physicists to discuss the possibility of a nuclear arms program. Most of those present responded enthusiastically, whereupon Bhutto, a long-time advocate of nuclear weapons, promised that the government would do whatever it takes to create a bomb. Dr Munir Ahmad Khan, at that time employed by the International Atomic Energy Agency (IAEA), and a supporter of the atomic arms program, became head of the Pakistan Atomic Energy Commission (PEAC), which had been established in 1957. This commission coordinated nuclear research and managed, among other things, a commercial reactor of 137 MW that had been supplied by Canada as well as a uranium mine.

However, to create an atomic bomb additional knowledge was required. In order to acquire this knowledge M.A. Khan sent abroad several Pakistani physicists for research purposes. In 1972, two of them worked for some time at a centre for theoretical physics in Milan, where they conducted research on atomic fission. Moreover, in a company in the Belgian city of Mol a team of three researchers collected information on uranium enrichment. Several Pakistani physicists who had been involved with the Manhattan project also went to work at the PEAC.

In March 1974 Dr M.A. Khan put together a team of scientists and technicians to start working on the creation of a bomb. The commitment of the team got a strong boost when India detonated an atomic bomb two months later. Bhutto announced that Pakistan would start its own nuclear program to break the Indian atomic hegemony on the subcontinent. This program would be peaceful, he declared. The CIA did not believe this statement and stated that Pakistan which, like India, did not sign the 1969 Non Proliferation Treaty, would have nuclear weapons within ten years.3

**A.Q. Khan and his network**

Support for the nuclear program came shortly after this from an unexpected source. In September 1974, Bhutto received a letter from Dr Abdul Qadeer Khan who had studied metallurgy in West Berlin and Delft and received a PhD from the University in Leuven, Belgium. Two years earlier, Khan had gotten a job at a company called FDO, a subcontractor of the Ultra Centrifuge Nederland (UCN) in the Dutch city Almelo. UCN was the Dutch...
partner of Urenco, a British-German-Dutch consortium which was working on a new procedure for uranium enrichment with the use of high speed centrifuges. After a superficial background check from the Dutch Intelligence and Security Agency (BVD) Khan had received a security clearance. Although he was officially not permitted to do so, Khan regularly visited the Urenco complex. Later on he translated a technical manual on the advanced G-1 and G-2 centrifuges from German to Dutch.4

In his letter Khan offered his services to Bhutto and urged Pakistan to use ultracentrifuge for its uranium enrichment program. Bhutto arranged a meeting between M.A. Khan, the head of the nuclear arms team, and the Khan from ‘Almelo.’ This meeting led Pakistan to switch to the ultracentrifuge process for the enrichment of uranium. The ‘Dutch’ Khan would become a participant in the Pakistani nuclear weapons program.

From the second half of 1975 the team started to obtain the same machinery used by Urenco for its uranium enrichment. Most orders were made by Dutch companies using Khan’s expertise. These orders were mainly for controlling-equipment for the engines of the centrifuges. His activities caught the eye of the BVD, who found out that Khan had been asking ‘suspicious questions’ at a fair for nuclear materials in Switzerland. As a result FDO reassigned him to a different job. On December 15 1975 Khan unexpectedly left for Pakistan, taking with him copies of designs for centrifuges and other equipment as well as the contact information of almost a hundred Urenco suppliers.

In Pakistan Khan worked for the PEAC for a couple of months but left after a conflict and built up his own firm. Bhutto gave this new company authority to conduct autonomous work on uranium enrichment. By the beginning of 1978 Khan had produced working prototypes of centrifuges derived from the German G-1 centrifuges that were being used in Almelo. To honour and thank Khan, in 1981, President Zia-ul-Haq changed the name of the company to Khan Research Laboratories (KRL).5

In the middle of the 1980’s KRL started using the faster P-2 models that were derived from the G-2 examples from Germany. This was also the time when Khan, a sociable man, started to build a network for the buying and selling of nuclear hardware via middlemen and various foreign companies. Thus, KRL sold parts of a P-1 centrifuge to Iran in the late 1980’s. Later on Khan would also do business with, among others, Libya and North Korea. In 1990 he offered his expertise to Saddam Hussein, to help him with the enrichment of uranium. The Iraqi leader, who suspected a trap, did not accept this offer.6 It is unclear whether the Pakistani government was informed about Khan’s business. In early 2001 Khan, who was known as the ‘father of the Pakistani bomb,’ was fired as the director of KRL. In 2004 he confessed his business dealings on national TV after which he was placed under house arrest for a short period of time.

A delayed bomb

The search for a usable nuclear weapon continued throughout the 1980’s. Of great importance was the acquisition by Khan around 1982 of the blueprint of a Chinese bomb that had been tested in 1966. Because the West had stepped up its checks on businesses dealing with nuclear technology, Pakistan turned more and more often toward its ally China
for equipment. From the late 1980’s on, China also started to give advice on the production of an atomic bomb.

It is as good as certain that around that time Pakistan had the capability to produce a number of nuclear bombs. In collaboration with China some ‘cold tests’ were executed. However, Islamabad operated cautiously and waited with its six atomic tests until two weeks after India detonated five nuclear weapons in 1998.7

A fragile state

From its founding, Pakistan has struggled with identity problems. In the first place, it lacked a party or political dynasty that could shape the nationalistic ideology in a practical way. In India the Congress Party and the Nehru family had taken up these roles. They created a somewhat stable base for the country in its early decades. Pakistan’s founding father Jinnah died shortly after independence, and the country lacked an inspiring national party. The latter’s absence was mainly caused by the structure of the country: the peripheral province of Baluchistan and the so-called ‘tribal areas’ on the border with Afghanistan feel little connection with the rest of the country. The position of East-Pakistan has already been described.

The army was the only national symbol in this situation, and therefore played a leading part in the political system. For three long periods the country has been ruled by military leaders with varying opinions regarding politics. Ayub Khan (1958-1970) was a Western-oriented military man who wanted to modernize the country - with an iron fist, if necessary. Mohammad Zia-ul-Haq (1977-1988) on the other hand, held conservative Islamic views. Under his leadership the country adopted a sharia-based constitution. Pervez Musharraf (1999-2008) was a pro-Western, moderate Muslim.

From the late 1960’s Zulfikar Ali Bhutto, a Western-educated landowner from Sind and leader of the Pakistan People’s Party (PPP) was the main opponent of the military. He won the 1970 elections in West-Pakistan and pursued Ayub Khan’s modernization efforts. Allegations of election fraud and a coup by Zia-ul-Haq forced him out after seven years. Bhutto was sentenced to death and executed in 1979.

Zia’s rule was dominated by the consequences of the Russian occupation of Afghanistan in late 1978. This situation drew Pakistan out of its isolated position because the United States needed the country in order to support the Islamic fighters there. The battle against the Soviet Union gave Zia the opportunity to speed up the Islamization of Pakistan. He supported radical Islamic parties and allowed conservative, especially Saudi, organizations to open mosques and Quran schools. A broad-based opposition against his reign was led by Benazir Bhutto, the daughter of Ali Bhutto.8

Zia-ul-Haq died in a plane crash in 1988.9 This cleared the way for elections, which were won by Benazir Bhutto’s PPP. She formed a government, but due to internal disputes and accusations of corruption, she did not hold power for long. This was the beginning of an instable period in which Bhutto and her arch rival Nawaz Sharif, leader of the Pakistan Muslim League (PML) alternated as government leaders.
In 1999 army commander Pervez Musharraf led a new military coup. He tried to create an appearance of legitimacy by conducting a referendum but did not succeed in overcoming the increasing chaos in the country. His support for the American attack on Afghanistan after 9/11 won him the enmity of the Islamic extremists, who tried to assassinate him several times. Their attack on Benazir Bhutto in December 2007 proved more successful.

The PPP won the 2008 elections, and they shaped a coalition with a split off faction from the PML. This government began impeachment proceedings of Musharraf, who resigned as President in August. Asif Zadari, the widower of Benazir Bhutto and her predecessor as leader of the PPP, was then elected President, a position he still holds.

This history explains why Pakistan is often described as a fragile state. The country is plagued by endemic corruption, and terror attacks by Islamic activists occur on a daily basis. Add to these the bloody conflicts between Sunni and Shia groups and the everlasting tensions surrounding Kashmir and it will become clear why experts on nuclear security worry about Pakistan as a nuclear superpower.

The nuclear security situation

Pakistan currently has approximately 100 nuclear weapons and the missiles (built with Chinese help) and airplanes (supplied by the U.S.) to transport those weapons. Every year the country produces at least 100 kg. of highly enriched uranium suitable for weapons production. Since 1998 it also produces plutonium which can be used to create more advanced arms. Parts of the Pakistani nuclear program can be found at around twenty different locations throughout the country, including uranium mines, gas centrifuge installations to enrich uranium, and facilities to produce plutonium.

What are the dangers for Pakistan’s nuclear power? The greatest danger would be an increase in instability to the point where the command structure of the (military) security system could no longer function. In such a situation the nuclear arms or parts could fall into the wrong hands.

A second danger is the collaboration of employees of the nuclear program with members of radical organizations. The expansion of the activities of the Pakistani Taliban in the west of the country where some of the nuclear facilities are located also poses a threat as do attacks by various terrorist organizations on installations elsewhere in the country.

It should be noted that Al Qaeda showed interest in atomic weapons in the late 1990’s. Supposedly, representatives of Osama bin Laden met with employees of Khan’s KRL in 1998 although without any results. Al Qaeda did get limited assistance from various radicalized former employees of the PEAC, including the famous scientist Sheik Bashiruddin Mahmood. In 2001 Bin Laden and Ayman al-Zawahiri, then the organization’s second in command, obtained advice on the production and transport of nuclear material and biological weapons from them.

In 2009 senior Al Qaeda leaders declared that the movement would like to have access to nuclear weapons. Other radical Muslim groups have threatened to attack nuclear installations but rather as a response to the cooperation between Pakistan and the United
States. Recently there have been attempts to kidnap staff members of nuclear installations. It remains unclear who was behind those attacks.\footnote{12}

A further security problem arises from the fact that various terrorist groups traditionally have good relations with the Pakistani Intelligence service, Inter Services Intelligence (ISI). Militants from, for example, the Pakistani Taliban - not to be confused with its Afghan namesake - were trained by the ISI and closely collaborated with this organization during the Soviet occupation of Afghanistan. The ISI is therefore often described as a ‘state within a state’ with its own foreign - i.e. anti-Indian - policy and operates virtually unchecked by the government.\footnote{13}

Part of the ISI policy is the training and coaching of terrorist groups that operate in the Indian part of Kashmir. Those groups, such as the Lashkar e Taiba (Army of the Pure) which was responsible for the infamous Mumbai attacks in 2008, also conduct attacks on ‘unbelievers’ in Pakistan itself whenever they see fit. The Pakistani Taliban, who are not participating in the Kashmir conflict, are held responsible for the assassination of Benazir Bhutto.\footnote{14}

How is the security of Pakistan’s nuclear weapon complex regulated? In the first decades the security of the nuclear facilities was controlled by the army, and little is known about this. Because the program was a secret, the researchers, especially those from Khan’s KRL, had a great deal of freedom. Shortly after his coup in 1999, Musharraf established the National Command Authority (NCA) which took shape a year later. The NCA was set up to control the entire nuclear arms complex, including its military branch. The Prime Minister is chairman of the ten-member NCA board. In the first years Musharraf himself, as President, held this position. Besides the Prime Minister, the NCA consists of the chairman of the Joint Chiefs of Staff, the Ministers of Defence, Internal Affairs, and Finance, the chairman of the Strategic Planning Commission, and the commanders of the three army units. There should always be consensus within the NCA on the possible use of nuclear weapons. However, the chairman’s vote is decisive.\footnote{15}

On paper these procedures guarantee security, but the 2001 attacks raised worries in the United States about Pakistan’s nuclear arms. This concern primarily related to two things: an uprising within the army, by which the fundamentalists would get their hands on one or more bombs, and ‘slow theft,’ a situation where unreliable employees steal small amounts of nuclear material to hand over to terrorists who can convert it into a ‘dirty bomb.’

Right after 9/11 high-level negotiations took place between nuclear experts from both countries. The Pakistanis supposedly gave the Americans an insight into their command- and control structure regarding the security of their nuclear arsenal. After 2001 Islamabad also was to have started the construction of an underground tunnel system for the storage and transportation of nuclear weapons. Washington did its part by giving advice, providing training facilities, and donating security equipment, worth a total of around 100 million dollars.\footnote{16}

There also would have been discussions about separated storage for the nuclear-fuel-core weapons and for the detonators (triggers) with their conventional explosive cores. The main goal of this measure is to prevent nuclear weapons from ‘accidentally’ being used in tense
times. The separated storage and the related additional time needed to make the weapons ready to use enforces a pause for reflection. However, the assemblage and transportation make the weapons vulnerable to terrorist attacks, as several war games showed.

The Americans also assisted with the establishment of a Personnel Reliability Program (PRP) similar to the one they use themselves to screen new employees for nuclear projects. The program includes extensive background investigations of everyone involved, plus attention to their relatives and associates. The investigations focus on religious beliefs and the chances for radicalization. Travel, phone calls, and Internet behaviour are mapped and analysed. Moreover, the employees need to write reports on themselves and their co-workers and are periodically subjected to psychological tests.

The implementation of the PRP was easier said than done. A 2002 study pointed out that employees in high places were exempted from certain parts of the investigation. Only after the 2004 revelations about A.Q. Khan’s network was the program taken more seriously.17

The Washington-Islamabad relationship

The U.S. also uses intervention teams to secure itself against the danger of Pakistani nuclear arms falling into the wrong hands. In emergencies those teams are able to remove the triggers for the bombs, which are not radioactive and therefore easier to handle. The teams were established and possibly also deployed several times during the collapse of the Soviet Union whereby sometimes nuclear weapons were stored in one of the unstable, newly independent republics.

The American investigative journalist Seymour Hersh wrote in 1992 that he received information from sources connected with intelligence services that this unit has been training for years to disable Pakistan’s nuclear weapons. Recently the teams have been strengthened with a unit from the Joint Special Operations Command, an elite counterterrorism group. According to Hersh, an intervention team was on its way to Pakistan in the summer of 2009 after receiving a message about the disappearance of a part of a nuclear bomb. When it turned out to be a false alarm, the team was stopped in Dubai.18

The success of the intervention teams depends on the reliability of the information they receive. When this is lacking, an operation can result in a bloody failure. Therefore the deployment of the unit is a delicate and controversial matter.

Officially it is not possible to get American confirmation of the existence of the intervention teams. Islamabad states that there is no need for such American actions and that they will not be tolerated. Pakistan claims that its security system is sufficient and its army, based on the British tradition, is totally trustworthy.

The uncertainty about the existence of the intervention teams shows the deep distrust which characterizes the relationship between the two countries. Many Pakistanis are convinced that the United States has a preference for India and that it will always favour that country when it comes to nuclear weapons. For that reason, Pakistani commanders are reluctant to share secrets regarding their weapons. In public the impression is maintained that the relationship is based on trust and close cooperation. American foreign affairs expert
Leslie Gelb remarked: “The Pakistanis have learned how to deal with us, and they understand that if they don’t tell us what we want to hear, we’ll cut off their goodies.”

Despite this mutual distrust the general opinion of government officials and security experts is that Pakistan has greatly improved the security of its nuclear arsenal. The American chairman of the Joint Chiefs of Staff, Admiral Mullen, summarized as follows the situation in July 2011, after the death of Osama bin Laden and the attack on the Karachi navy base: the nuclear weapons were, because of improved training of the security staff, “physically more secure.” The Pakistanis have managed to introduce a relatively trustworthy PRP, which could still be improved at certain points. Mullen also confessed that he was not fully informed about Pakistan’s nuclear program. “There are limits to what I know and to what anybody outside Pakistan knows. But I know that they have invested a great deal, they’ve improved their procedures, and they take it very seriously.”

Continuing concern

Despite this progress security experts remain worried about Islamabad’s atomic power. The biggest danger lies in the possible ties between Muslim extremists, the military, and members of the ISI, particularly in lower and middle management positions within the organizations. It is suspected that people in these positions were also involved in the protection of Bin Laden. The attack on the airport in Karachi where the attackers knew various security protocols and even the locations of the security cameras is seen as a blueprint for future attacks. David Albright, a prominent expert in the field of nuclear security, however, considers the chances of terrorists getting hold of a bomb in this fashion slight. It is one thing to get around the security system on a military base with inside help, but it is something totally different to gain access to a bunker in which nuclear weapons are being stored, he says.

Albright is more worried about the previously mentioned possibility of extremists or their associates stealing nuclear material during the production process. Many different people are involved in this process which reduces the chances of discovery. This scenario would also fit the recent growth of intolerance within Pakistan which is characterized by the assassinations of the Punjabi governor and the Christian minister of minorities by, respectively, Muslim terrorists and a bodyguard. Both of the victims were engaged in the revision of a controversial law on slander of Islam. Moderate Islamic parties also applauded the assassinations.

The growing bigotry and radicalization have also become evident in the great popularity among younger officers, according to some Pakistani sources, of preachers who denounce Western/Indian and ‘Zionist’ plots and call upon soldiers to characterize themselves firstly as Muslims and only secondly as Pakistanis. For this reason the issue of Islamabad’s fast-growing nuclear arsenal will retain a prominent position on the agenda of nuclear security experts for quite a while.

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5. A.Q. Khan, ibid.
8. Verkaaik, ibid., 61-76.
9. The general opinion is that sabotage caused the plane crash which killed Zia-ul-Haq.
15. Kerr, Nikitin, ibid., 11, 12.
16. Bajoria, Otterman, ibid.
19. Ibid.
21. Ibid.
22. The Guardian, 5 January and 2 March; Hersh. ibid.