



RESEARCH PAPER

Pakistan's Quest for Security of Nuclear Weapons: An Analysis

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PAPER INFO

Received:
August 16, 2018
Accepted:
December 24, 2018
Online:
December 30, 2018

Keywords:

Nuclear weapon,
Weapon of Most
Destructions
(WMDs),
Security

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ABSTRACT

Fall of Dhaka in 1971 and Indian Nuclear Explosions in 1974, changed the course of Pakistan's nuclear weapons program. Pakistan developed nuclear weapons due to Indian conventional and strategic superiority. The objective of this study is to highlight Pakistan's efforts to secure its nuclear program. It emphasizes that Pakistan's nuclear weapons are heavily guarded and secure. This paper is descriptive in nature and completed in the light of qualitative research method. Paper concludes that though Pakistan nuclear authorities have implemented personnel reliability program. It implements international safeguards yet international community is raising questions on security mechanism and safety of Pakistan's nuclear weapons. The most important diplomatic task in front of Pakistan at this time is to fight against misunderstandings perceived by international community and to provide satisfaction to the world.

Introduction

Since, Pakistan became the nuclear power, it remained under stressful scenario. Pakistan had to face various threats from inside as well as from outside. The country remained target of different conspiracies which had been weakening its stance even on nuclear issue. Ultimately, Pakistan became successful for attainment in nuclear weapons owing to indigenous technology resulted into atomic and nuclear arsenals. Pakistan has become efficient enough to make heavy water, enrich uranium and plutonium and build atomic arsenals as a result of its sheer hard work and iron determination. At his need of hours, Pakistan possesses a complete developed advanced missile program. Undoubtedly, there are huge resources required to bolster the security and integrity of Pakistan. However, the

country faced numerous sanctions, difficulties and hurdles for doing the bold deed of attaining nuclear technology and atomic weaponization.

Notwithstanding, a few unfortunate incidents of nuclear proliferation and terror incidents have raised questions over the security of Pakistan's nuclear resources. Unluckily, the northerly zones of Pakistan remained the base of Al-Qaeda's radicals. These radicals proclaimed that they were in search of nuclear materials. All these elements are perceived as huge threat for global peace and security. The incident of 9/11 and the global order after that, result in turmoil in Pakistan in many aspects especially socially, culturally, politically and economically. International media attempts to trace down the links of all the terror incidents from all around the world in Pakistan. That's why the global forces show enhanced concern over Pakistan's nuclear security.

The sorry state of the affairs is a violent wave of extremism pressed throughout the country. Radicalism and sectarianism have slanted the beautiful expression of Islam and Pakistan. Various terrorist organizations have been into a catastrophic game and using the name of Jihad. These incidents required to be handled instantly by the appropriate actions of the government. Otherwise, any relaxation in such issues would be very lethal for the peace and prosperity of Pakistan. The big powers of the world are pressurizing Pakistan to sign CTBT and NPT and trying to stop its nuclear program. They are raising questions on the protection of Pakistan's nuclear resources.

On the other hand, Pakistan had developed robust system of security for its nuclear resources. U.S. and other international agencies have shown confidence in the Pakistan's security measures. Pakistan has a strong command and control system to protect its nuclear arsenals and Pakistan is not backing down on nuclear issue at any cost. Pakistan is entirely and completely capable to secure its nuclear resources from any terror attack inside or outside.

Impending Challenges to Pakistan's Nuclear Security

As indicated by the IAEA, atomic security structure is referred as "the combination of international binding and non-binding legitimate instruments altogether with IAEA atomic security directions:' (Akhtar & Hussain, 2010). Pakistan holds fast to this legal system and is a dynamic member on all IAEA seminars of training, data trade, administrative help and capacity building that forms its atomic security system. The concerns brought up in the global media concerning Pakistani atomic bombs, resources, materials staff reached all points of confinement of anticipating most pessimistic situations, however, none of the reports have been issued about Pakistan's atomic weapons pointing out any substantial issues within the framework of Pakistan's nuclear program.

The irony of the fate is that the internal danger, the external risk, the internal-external agreement, the rebel hands and the hypothesizing about activist

radicals looking at Pakistani atomic weapons, all these have turned into some criteria for criticizing Pakistan and force it to accept the programs like CTR between the US and the previous Soviet Union. In any case, Pakistan is not the Soviet Union (Akhtar & Hussain, 2010).

In spite of having satisfied all obligations as determined by IAEA atomic security system, trust in Pakistan's capacity to protect its workforce and resources stays doubtful. Pakistan is a party to both the Biological and Toxin Weapons Convention and Chemical Weapons Convention and does not deliver or have biological or chemical weapons. However as sad as it remains, reports like "World at Risk" by the Commission on the Prevention of WMD Proliferation and Terrorism keep on speculating that Pakistan represents a grave peril of WMD assault, given the alleged vulnerability of its atomic stockpile. Such reports crash confidence developing measures (Graham, 2008).

A lot of doubts and questions emerged regarding Pakistan's atomic security culture after the unraveling of A.Q. Khan's procurement network. Nonetheless, as per researchers, the atomic security culture was initially intended to ensure the self-rule of the researchers so that their work could proceed without any difficulty. In view of the importance of the issue, directors of the program had no power to scrutinize the processes and exercises of the researchers. This empowered Khan to exploit the absence of legitimate responsibility.

Following are the basic challenges perceived by Pakistan regarding its nuclear safety and security:

Terrorist Threat

The intersection of expanded terrorist action in Pakistan, the ongoing political precariousness, and the development of the nuclear stockpile is expanding the level of danger to the nuclear security of Pakistan. The quantity of nuclear installations and officials that manufacture and utilize sensitive atomic materials is expanding, increasing present expectations for staff screening and system security. Recently there was a reported risk by the Taliban to assault the atomic complex at Dera Ghazi Khan, a remote town in southern Punjab, however, the assault failed to happen (Salik & Luongo, 2013). Since 2001, Pakistan is aware of the terrorist threat and has found a way to enhance the command and control framework for its atomic resources and the screening and training of workers in nuclear institutions. Similarly, as with all security frameworks, consistent cautiousness and a culture of ceaseless development are vital to deflect the dangers (Korb, 2009).

The Kamra Air Base Attack

The Taliban assault in August 2012 on the Pakistan's air forces base at Kamra, northwest of Islamabad, stood out as truly newsworthy in the international media and renewed worries about the security of Pakistan's atomic

weapons(Walsh, 2012). Many news reports conjectured about the presence of no less than a part of the Pakistani atomic munitions stockpile being at the base(Hussain, 2012). In spite of these reports, there were no nuclear weapons held at Kamra Base. A Pakistani government representative denied that any atomic weapons were kept at the base, and U.S. military and political authorities decided out the likelihood that the assault on the base represented danger to atomic weapons(Davenport & Taylor, 2012).

The base houses a noteworthy aeronautical complex with offices for the creation of flying hardware and the redesign and gathering of airship, including plane coaches and the JF-17 Thunder, which China and Pakistan mutually created. At the time of the assault, some airplane with airborne cautioning and control frameworks were stopped on a landing area that experienced some harm, as rocket-propelled grenades were terminated by the activists. A recent assault by Afghan Taliban on Camp Bastion, a British army installation in Afghanistan's Helmand region, has demonstrated that even an installation situated in a forsaken territory and ensured with probably the most advanced sensors can be entered. The assailants pulverized five airships worth a millions of dollars at a base that some have portrayed as the most secure spot on earth. Pakistani air bases cover a vast range ensured by security barriers, which are not very troublesome for composed and decided aggressors to rupture. The airplane parked on the runway an easy prey that can be seen from a distance and hit with generally customary weapons. Moreover, it ought to be remembered that the target of the suicide attack is to bring about most extreme harm, not to seize hardware or materials.

The examination of the command and control, custodial and export control frameworks demonstrate that it is, to be sure, second to none on the planet. It is likewise not completely valued that unlike some of other atomic states, aside from specialized controls and safety mechanism, in spite of being a developing state and may be consequently, Pakistan could afford increasing specific workforce and troops devoted for protecting it resources against interior and outer dangers. Along these lines, the danger of any terrorist assault on atomic installations in order to sabotage the resources or fissile material, in all actuality, does not exist. Various physical and personal reliability frameworks, and in addition stock controls and checks, dismiss any insider-pariah dangers.

Inside Threats

A worker in atomic facility with access to basic learning could assist extremists. Atomic plants across Pakistan have more than seventy thousand operational faculties. It incorporates more than eight thousand researchers, security staff besides regulatory authorities. Likelihood for rouge actors to invade through aforementioned staff is not very outlandish. U.S. official asserted that different radical organizations endeavored to invade laboratories and spot sleepers(Sanger, 2009).Additional difficulty includes persons who had right of

entry to the sensitive data are get to be pensioned off, resign or they have to leave the system. Due to the large number of individuals, it is quite hard for the state to monitor every one of them. There have been a few reports of Pakistani researchers associated with helping or working with terrorist associations (Salik & Luongo, 2013). The New York Times reported, two former researchers from the PAEC, Chaudhry Abdul Majeed and Sultan Bashiruddin Mahmood had meetings with the suspected terrorist and leader of Al-Qaeda, Osama Bin Laden in 2001 (Frantz & Rohde, 2001).

Basrur and Rizvi writers of 'Atomic Terrorism and South Asia', stated, that it is impracticable for extremist organizations to overpower Pakistan army or intelligence officials to infiltrate these security apparatuses or nuclear program. The radical Islamic groups are not a unified or solid development. Or maybe, these organizations veer fundamentally as a result of 'denominational contrasts and identity clashes,' (Basrur & Rizvi, 2003). They affirm that the inward structure of the Pakistani Army is such that, its officials are dealt with after their retirement, this is how it eliminates the chances of any connections of insiders with radical components. They guarantee that the military entirely screens the unwavering quality of senior officers, and they are taboo from creating connections to rouge elements and politically motivated religious movement (Basrur & Rizvi, 2003).

Loss of Control over Nuclear Weapons

Because of great political instability, there is not one power center in Pakistan unlike other states. It has many power centers which fight for the legitimate control of power with each other. There have been arrangements made by the armed force to remove a political leader. It is feared fanatics inside foundation can take control of atomic munitions stockpile by organizing chaos. There is likewise dread of civil-war inside country between the military and the political base. Pakistan Policy Working Group in a report proposed to strengthen democratic forces and give power to general population in light of the fact that an unaware public will likely open doors for fanatic groups to prosper (The Next Chapter: The United States and Pakistan, 2008).

Nevertheless, Ali, a Lt. Colonel in Pakistan military and SPD, official clarifies why it is far-fetched that fanatics in the army will take control of country's atomic munitions stockpile in a chaos. He contends regardless of the fact that an overthrow toppled the present government. It would be over tossing the administration to acquire power, instead of taking control of atomic weapons. Thusly, the institutional systems effectively settled will carry on their duties irrespective of who is in power (Ali, 2011).

Another apprehension similarly is of Islamist's takeover when the present government breakdown or in the event that they come to power through electoral procedure (Bunn, 2010). Former foreign minister Abdul Sattar asserts atomic bomb is neither Hindu nor Christian or Muslim. An atom bomb is just an atom bomb; it

does not have any religion. As indicated by the ICG, survey has found that if free and fair elections were arranged according to constitutional bindings the outcome would be against fanatic's government in Pakistan (Pickering, Hills, & Abramowitz, 2007). Thus there is no real danger in Pakistan that fanatics groups can come into power in Islamabad.

Security Mechanisms

Malik Qasim Mustafa emphasizes on physical security of atomic weapons. It is secured by a manifold framework, which incorporates no-fly zones, fencing of establishments, close circuit cameras, detectors, check posts, and counter-insight groups to recognize any danger to atomic facilities; all warheads are outfitted with PALs (Mustafa, 2014).

Separation of Nuclear Warheads

Delivery frameworks of Pakistan are composed of fighter planes or missiles. Weapons are supposed to be stored detached from delivery system, with the atomic cores expelled from their detonators (Clary, 2010). It has likewise been guaranteed by numerous investigators that the weapons are also believed to be scattered at up to six different areas. In this manner, the precise number of weapons stockpiling destinations can't certainly be found out.

As the weapons have been dismantled now there are concerns regarding the validity of deterrence? Gen. Khalid Kidwai, has expressed that the weapons could be amassed rapidly. According to a Harvard specialist Bunn in an occasion of external threat, they would need to 'thump more than two structures to acquire an assembled atomic bomb, (N., 2012).It basically implies that triggers and warheads are put away separately. It is indistinct whether Pakistan applies the two-man command or the three-man command, regarding the quantity of individuals who have command in the case of emergency (Clary, 2010). It is additionally vague how these individuals get their data. A few Pakistani experts have recommended a two-man command which could transform into a three-man command in case of an emergency. Khan recommends that the 'three men' could allude to the missile dispatch group authority, an agent from SPD and the head expert from the strategic organizations. In 2006 Kidwai expressed that Pakistan utilized 'what might as well be called a two-man principle and permissive activity links,'(Schram, 2003).

Material Protection, Control and Accounting (MPC&A)

Since, 1998 the SPD is in charge of leading outside reviews on all atomic installations. Notwithstanding the orderly procedures set up, it additionally arranges surprise checks at nuclear installations. The Karachi and Chashma-1 and the PARR I and II, work under IAEA safeguards, however, a few main atomic weapons complexes are not under IAEA safeguards for example, KRL, which

yields weapons-grade Uranium and other enrichments plants at Golra, Sihala and Gadwal (Schram, 2003).

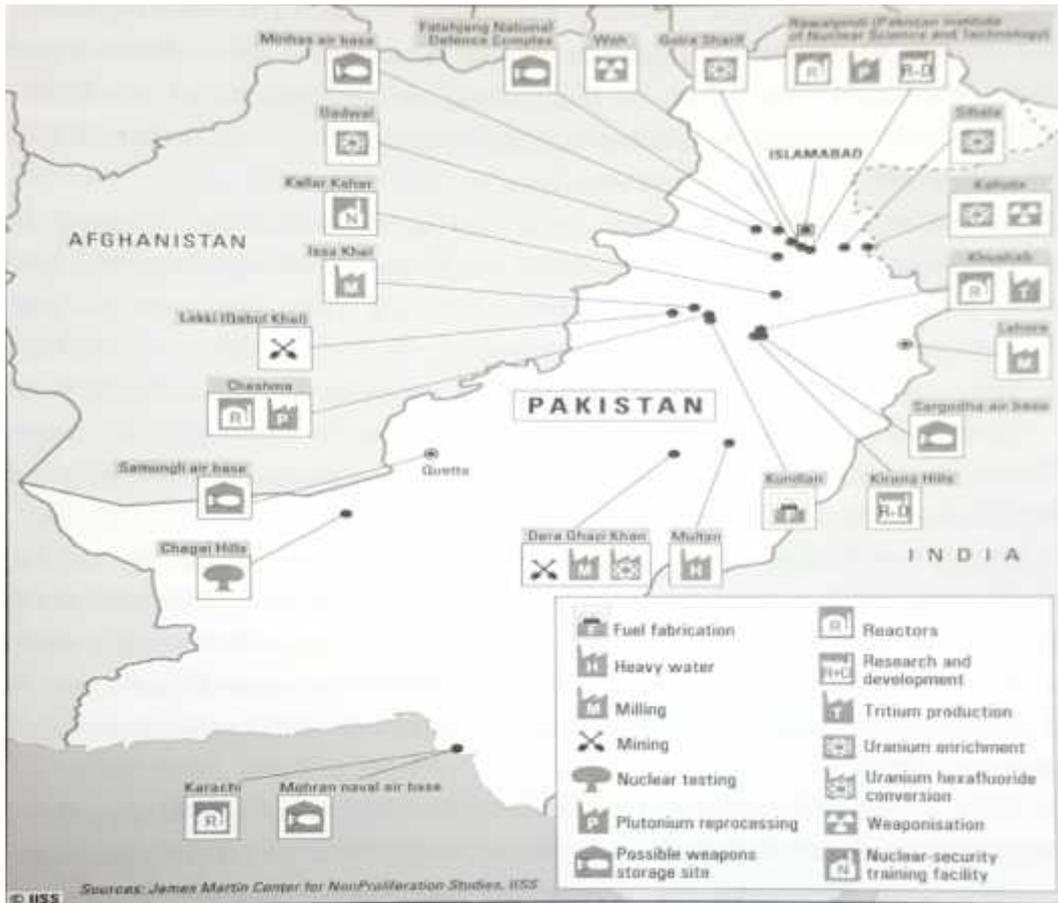
Permissive Action Links (PAL's)

Pakistan has introduced its self-build PALs on its atomic weapons and a two-man command is functional in the safety mechanism of its nuclear weapons. The two-man command is an idea, in which control instrument is set up and hence no single person is approved with access codes to reach the sensitive material and data. As there are no insights about the way of Pakistani PALs are accessible, non-exclusively PALs are 6-or 12-digit- alphanumerical codes, which as indicated by different sources secure the weapon from exploding regardless of the possibility that it has been incidentally dropped. The weapon consequently gets to be disabled if the codes are entered wrongly over an excessive number of times.

Previously they were known as 'PAL' electromechanical which alludes to a cryptographic blend lock on atomic weaponries. It prevents unapproved use of nuclear bomb by extremists. The upgraded versions are microchip-based (Bellovin, 2006). Initially, Pakistani atomic bombs were not furnished with PALs. Samar Mubarakmand asserted that every Pakistani arsenal is presently tailored with a code-lock gadget. Additionally, Kidwai has formally affirmed the equipment of PALs in November 2006(Walker, 2006).

Security during Transportation

Another danger that has been recognized is amid the transportation of the warheads. Despite the fact that warheads are exceptionally shielded while transferring from one place to another, they are still open to dangers and an assault on their way(Cirincione, Jon, & Miriam, 2002). The assignment of guarding and securing atomic material is exceptionally intricate, yet it is significantly trickier when materials, for example, spent atomic fuel and high action radioactive sources are in travel(Pakistan Shifting Nukes in Unsafe Vans, 2011). The major issue is that defensive layer puncturing weapons could be utilized to infiltrate transportation holders, which will bring about a lot of radioactive materials discharged into atmosphere. As an answer for this, Pakistani authorities wanted to procure specific vehicles that can secure the material in the time of assault. Pakistan has signed the CPPNM in October 2000. This convention basically covers transportation of atomic materials. For guaranteeing security of nuclear assets while transporting, Pakistan has established exceptional measures to guarantee transportation of sensitive materials by obtaining such vehicles which are equipped with fool proof security system.



Source: Marks Fitzpatrick, *Overcoming Pakistan's Nuclear Dangers*, IISS, Routledge, March 2014.

Safety Mechanisms

While addressing at UN, Pakistani Foreign Minister Hina Rabbani Khar stated that her nation takes atomic security "exceptionally seriously," (Pakistan's Nuclear Programme Fully Secure: FM Khar , 2012) Islamabad's endeavors since its 1998 atomic tests give backing to that claim.

Command and Control

Not long after the atomic blasts in May 1998, Pakistan's command and control structure was set up in 1999. On February 2, 2000, the NSC affirmed the foundation of the NCA (Durrani, 2004). Pakistan's atomic command association is a multi-layered framework, which is fundamentally grouped in three levels the NCA, the SPD and the Strategic Forces Commands.

Pakistan has set up a complete institutional structure with the NCA at the zenith for policy formation and development of key frameworks. The PM is the Chairman while the SPD is the Secretariat to the NCA. This structure makes it clear

that the last power on the use of atomic weapons rests with the civilian CEO and that any such choice would require comprehensive consideration in the NCA organization for this reason.

National Command Authority

The obligations of the NCA incorporate deployment and employment of atomic force, regulation of Pakistan's key institutions, managing the issues related with arms control and disarmament, and regulating execution of export controls and the safety and security of atomic establishments and materials(Lavoy, 2007). The NCA has a three-tier structure. Both committees ECC and DCC work as the first tier of NCA and its second tier is the organization of SPD, which provide support to both committees and keep a check over the weapon system's development(Chandrashekar, Kumar, & Nagappa, 2012). The third tier of the NCA is the three strategic force commands ASFC, AFSC, and NSFC. These forces maintain an directorial and technical control over their forces respectively and provide training to them. Operational control, in any case, rests with the NCA(Niazi, 2000).

Previously the NCA was headed by President but with the eighteenth constitutional amendment, Prime Minister now heads the NCA. ECC is the part of NCA, which hold account for making of nuclear strategy and it involves the process of recruitment and positioning of nuclear forces and it chooses the prospects for nuclear use. This committee contains the Cabinet Ministers and Military Chiefs and Foreign Minister is the Deputy Chairman of this Committee. This committee's functions involve the review of the demonstrations regarding the perceived threats, watch the evolvement of the weapons growth and it chooses on the reactions to evolving threats. It works on developing course of actions for the better performance of command and control system in order to mitigate the threat of accidental or illegal use of nuclear weapons(Chandrashekar, Kumar, & Nagappa, 2012). CJCS is the chairman of the DCC Committee. This Committee is in charge of weapons development. It does not involve any political leadership except Prime Minister. This Committee have the task of keeping the control over the mechanical, fiscal and managerial organization of all the strategic institutions.

NCA provides military course by the CJCS, retained in the NMCC(Khan, 2012). The power of taking the decision regarding the launching of nuclear weapons lies in NCA and its chairman cast the final vote over the mutual consent(Durrani, 2004). When NCA was officially declared, all the national laboratories were brought under the direct control of SPD which formed a military style mechanism to maintain its control over all the laboratories. Sooner all the institutions and organizations involved in the working of nuclear and missile program were brought under the strict control of NCA. The nuclear and conventional programs were separated by the NESCOM, which was headed by Samar Mubarakmand(Krepon, 2009).

All organizations had been given their confined roles and they must focus on them. These organizational changes which brought some structural bindings equally applied to all the officials working in the nuclear sphere like standard operating procedure adopted by the SPD for all the nuclear organizations. Clearance procedures for abroad travels were required for all the members of scientific organizations. Moreover, reporting on all financial payments was mandatory (Levoy, 2006).

Strategic Plans Division

The SPD assumes courses to guarantee the safety and security of key resources in both the short and extended term. Whilst managing economical, mechanical, progressive and executive matters, the SPD assists the NCA to practice efficient command over strategic institutions, installations and resources. On the internal side, it directs its exertion with the Foreign Office and main Pakistani Ambassadors at CD Geneva, IAEA Vienna, the UN HQs at New York, and at the key capitals around the globe, to deliver and deliberate ideas. Likewise, collaboration to inaugurate a C4I2SR system for command and control of key resources for the NCA, with actual connections to the assistances C4I2SR systems and Strategic Forces is additional duty of this section. The security department operates by the SPD's Security Division, is an additional major accomplishment (Kerr & Nikitin, 2010).

Briefly, the SPD's tasks comprise preparation of nuclear strategy, nuclear scheme and nuclear guideline. It envisages safety and security of the nuclear program of Pakistan comprising deliberate resources (Niazi, 2000). This includes mechanical solutions, dependability and counter intelligence. It apprehends and accelerates innovative progress, development and management of nuclear energy. Lastly, it helps in executing national duties in regard to proliferation of WMD and WMD terrorism (Lavoy, 2007).

Security Division

The security element in Pakistan's nuclear organization has been expanded in the recent years. Physical security is multi-tire and has a complex organization of approaching command. The existing structure includes over 10,000 special employees with manifold training in counter-intelligence, modern technology and extraordinary security executives for every commission (Akhtar & Hussain, 2010). Concerning physical security of Pakistan's atomic resources, multi-layered physical security systems are settled up to guarantee that no unapproved or incidental use can happen. Like other aspects of the project, access control to the key spots is on "need premise," (Banuri & Sultan, 2008).

Pakistan Nuclear Regulatory Authority (PNRA)

The PNRA was set up under the PNRA Ordinance No. III of 2001. Its center objectives are safety and security of radioactive materials, radiation insurance, guaranteeing physical safety of radioactive materials according to IAEA INFCIRC/225, transport safety, waste security. PNRA was founded in 2001 "to regulate the atomic security and radiation safety in Pakistan and the level to which civil liability for nuclear sabotage as an outcome of any atomic mishap."

The PNRA was founded in consistence of Pakistan's commitments under the CNS. It is the primary organization in Pakistan that provides directions regarding crisis readiness at a national level furthermore teaming up with global offices for atomic and radiological crises. With a specific end goal to reinforce and upgrade the current administrative capacities towards safety and security of atomic materials and facilities, Pakistan dispatched a five-year NSAP. Affirmed by the Government in May 2006, the execution of NSAP started in July 2006, for which the PNRA is the patron office. Pakistan has made different strides towards guaranteeing the safety and security of its atomic installations (Salik & Luongo, 2013). The NSAP has five principle goals, which incorporate the administration of radioactive sources and assessment of nuclear installations, the foundation of Nuclear Safety and Security Training Center, the foundation of National Nuclear Security Emergency Co-Appointment Center, indication equipment at entrance and exit positions to forestall odds of illegal trafficking and finding and securing vagrant sources (FBR, PNRA to Jointly Combat Illicit Trafficking of Radioactive and Nuclear Materials, 2008).

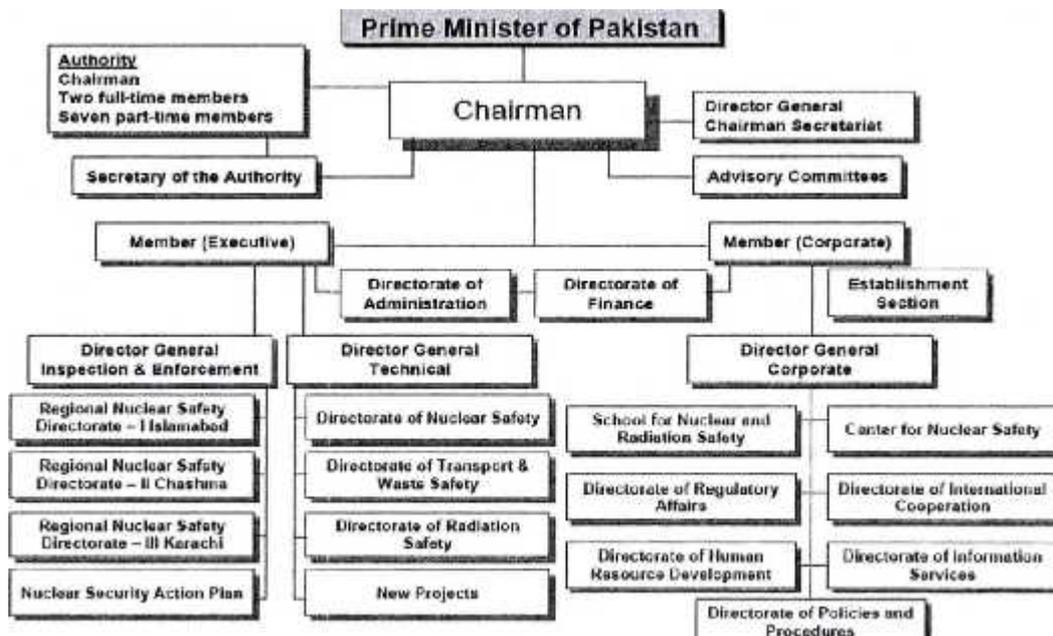
The foundation of the Nuclear Safety and Security Training Center is one such stride. The training center provides training regarding safety and security of nuclear material. Its research facilities are furnished with the latest apparatuses. Other than conferring training to the specialists on call, the inside additionally prepares custom and board authorities for detection of atomic and radioactive material at borders. A MOU has been marked between the PNRA and the FBR, to advance collaboration and arrange mutual coordination against illegal smuggling of radioactive and atomic materials'. One more progression in protecting Pakistan's atomic complex is the establishment of NNSECC (Luongo & Salik, 2007). The principle goal of setting up this unit, which operates all the time is to analyze, organize and react in case of any atomic incident or crisis in the country. The level of readiness for any radiological or atomic crisis displays Pakistan's awareness about catastrophe management in the event of an atomic mishap.

Keeping in mind the end goal to guarantee atomic safety, the NSD was set up to undertake permitting of atomic power plants, including alternations, security audits and re-authorizing, permitting and examinations of nuclear grade equipment production, setting up and keeping up administrative system for nuclear security, surveys and analysis, self-assessment, co-operating with local directorates in exercises regarding nuclear safety, keeping up and dispersing data

on nuclear safety inside PNRA, working methods and rules and principles(Akhtar & Hussain, 2010).

The Pakistan Institute of Engineering and Applied Sciences has presented graduate degree level courses with specialization in atomic security, fundamentally, to prepare new PNRA faculty. Pakistan additionally has profited from participation and trades of data on best practices with friendly nations, including the United States, and has kept up a vibrant association with the IAEA.

Organizational Chart of PNRA



Source: Dr. Rabia Akhtar, *Safety and Security of Pakistan's Nuclear Weapons*, Kansas State University, 2010.

Personnel Reliability Program (PRP)

A detailed mechanism called PRP has been established to guarantee a decent strategy to maintain check and balance. This framework additionally serves as enforcement mechanism for inner consistency. Since Pakistan's strategic associations are all under the control of state or public associations, it turns out to be moderately simpler to imply enforcement measures.

In spite of the fact that a security and screening process existed before for people worked in the strategic associations, it has been made extremely extensive with the innovation of PRP. This system covers people who can assess the sensitive data and also workers in the complex. Since 2001, the personnel system has been

reinforced and incorporated into the foundation. People who have to perform sensitive task need to go thorough safety procedures, requiring approval by the Inter Service Intelligence, intelligence department, army intelligence and the SPD. After the basic screening there are additionally intermittent and arbitrary checks, on the person as well as his family, colleagues and so forth(Hoodboy, 2008).

Sensitive Facility Perimeter Security

Perimeter security is considered very important for the nuclear establishments either they are civilian nuclear establishments or military nuclear establishments. SPD has the main responsibility for the physical security of nuclear installations. There is a manifold strategy for the protection of perimeter.

Inner Perimeter

The security of the inner perimeter is generally dealt by the particular associations, yet their security is currently administered by the officials of the SPD. Comparatively, SPD force gets special training regarding nuclear security than other forces. Many vital installations are secured by guards and assigned as no-fly zones.

Outer Perimeter

There are new innovations, for example, electronic detectors; close circuit camera's securing the external area. Additionally, an overwhelming fencing along the perimeter and a third level of security is available. This is comprised of counter-intelligence and their job is to indicate the outside dangers to the nuclear installations.

Technology Controls

As the state institutions and prevailing legislatures of Pakistan were operating affectively, it considers the review of its export control measures and laws soon after the tests of 1998. Although the global concerns regarding the security of nuclear assets provoked in the wake of the horrifying incident of 9/11, yet Pakistan was already on board to take initiatives for the protection of its nuclear capability. SPD delivered a comprehensive set of guiding principles regarding export policy to its strategic organization in September 2000. As NCA was established in 2000 the initiative of export policy guidelines was a quick progress. MFA and SPD teamed up for collective collaboration to analyze the technical data required for the preliminary drafting of the export control legislation. Export Control on Goods, Technologies, Material and Equipment related to Nuclear and Biological Weapons and their Delivery System Act 2004 of Pakistan is comprised of all the essential components required by an effective export control mechanism. This act widened the extent of check and balance over the material being export, re-export, trans-shipped and transfer of sensitive

possessions and know-how. This act further imposed sanctions on the alteration of sensitive technologies and know-hows with heavy penalties like the captivity of 14 years, fine of Rs 5 million and seizure of all the property in home and abroad.

On October 19, 2005 a national export control list (S.R.O. 1078(I)/2005) was issued according to the decree of the Export Control Act 2004. National export control list includes the elements which are supposed to meet the strict monitoring necessities. It is compatible and harmonious with the export control standards perpetuate by the NSG as it includes the elements mentioned in NSG Part I and II, the Australia Group and the delivery systems and mechanisms are in accordance with the MTCR lists (Akhtar & Hussain, 2010). SECDIV was established at MFA as an action of pursuance of the export control act. The SECDIV is collective body where the officials from different organizations like Pakistan Customs, MFA, Commerce, Defense, FBR, PAEC, PNRA and SPD have teamed up to provide their best for the victorious achievements on the enactment of the export control system.

A Super-Visionary Board was formed in July 2007 which included the senior officials of the government of Pakistan. This board was entitled with the task of reviewing the enforcement of export controls, especially the Export Control Act 2004. This board was given the responsibility oversee the working of SECDIV. Chair of this super-visionary board was Foreign Secretary and comprised of the officials from different organizations like the MFA, Defense, Interior, Cabinet Division, FBR, PNRA and the SPD. Overall, the rigorous export control system of Pakistan does not only bestow an inclusive structure within Pakistan but it also meets the global criteria in all purpose and instantly respond to UN obligations.

Conclusion

When comes to the nuclear strategy and policies of Pakistan there is a great element of ambiguity. That's why it is very hard to identify the whereabouts of weapons of Pakistan. Because of rigorous "Need to Know" strategy the rules of nuclear organizations are very firm. This secrecy and compartmentalization in the knowledge about nuclear program generate the element of ambiguity. Pakistan has always remained crystal clear regarding its C2 organization, safety measures and physical protection of nuclear resources. All of its safety and security measures are in accordance with the international safeguards which are being followed in letter and spirit even by other nuclear weapon states and non-nuclear weapon states. NCA, which is the central organization of Pakistan's nuclear program is beautiful combination of military and civilian officials working in comprehensive harmony in its organizational structure.

In spite of the Pakistan's gigantic endeavors to ensure its nuclear safety and security and possession of an effective and potent command and control system, there are unfounded doubts in the international community based on utterly wrong perceptions. The nuclear institutions of Pakistan consider that the doomsday scenarios are over now with a new wave of trust and confidence. "We

have the advantage of hindsight. We have worked hard, we have trained hard, and we are very sure of what we have. We have learnt from the best international practices," (Banuri & Sultan, 2008).

As there is no security system exists in the world which is foolproof, the unpredicted scenarios could not be countered even with the best kind of security methods. However, emergency preparation is persistently being assessed and verified with all potential risk scenarios catered for. In other words, nuclear weapons of Pakistan are as secure as any other country's arsenals or in as much dangerous as of any other country including P5 countries. People of Pakistan and nuclear institutions of Pakistan take great pride in being a responsible nuclear state. Despite being outside the jurisdiction of NPT Pakistan, without an iota of doubt is adhering to all global non-proliferation customs and adopts safeguard of IAEA. There is no evidence of trafficking or trading of uranium or other radioactive materials that has been authorized from IAEA's ITDB, keeps a perfect record of nuclear safety and security and is part of several obligatory and non-obligatory global mechanisms for nuclear safety and security in the globe.

The most important diplomatic task in front of Pakistan at this time is to fight against misunderstandings perceived by international community and to provide satisfaction to the world, that the internal challenges which are being faced by Pakistan are not going to affect its nuclear safety and security arrangements. Therefore, it is transparently evident that there is no danger to Pakistan's nuclear resources exit and there are strong mechanisms in place to counter the potential dangers. Same level of danger or even greater than that existed within other states. The wrong perceptions should not be used to undermine Pakistan, with the anticipation that it would reverse its strategic proficiency.

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