

The Terrorist Threat to Pakistan's Nuclear Weapons

By Shaun Gregory

AL-QA`IDA HAS MADE numerous statements about a desire to obtain nuclear weapons for use against the United States and Western interests.¹ While many of these statements are rhetorical hyperbole, the scale of the potential destructiveness of nuclear weapons, the instability and “nuclear porosity” of the context in Pakistan, and the vulnerabilities within Pakistan's nuclear safety and security arrangements mean that the risks of terrorist groups gaining access to nuclear materials are real. Moreover, militants have recently attacked a number of Pakistan's nuclear facilities, including an August 21, 2008 incident at the Wah cantonment, widely understood to be one of Pakistan's main nuclear weapons assembly sites.

In an effort to provide insight on the scale of the threat, this article will first outline Pakistan's current nuclear safeguards, and then identify a series of weaknesses in the country's nuclear security that could result in terrorist groups such as al-Qa`ida or the Pakistani Taliban gaining access to sensitive nuclear material.

Pakistan's Nuclear Safeguards

Pakistan has established a robust set of measures to assure the security of its nuclear weapons. These have been based on copying U.S. practices, procedures and technologies, and comprise: a) physical security; b) personnel reliability programs; c) technical and procedural safeguards; and d) deception and secrecy. These measures provide the Pakistan Army's Strategic Plans Division (SPD)—which oversees nuclear weapons operations—a high degree of confidence in the safety and security of the country's nuclear weapons.²

In terms of physical security, Pakistan operates a layered concept of concentric

tiers of armed forces personnel to guard nuclear weapons facilities, the use of physical barriers and intrusion detectors to secure nuclear weapons facilities, the physical separation of warhead cores from their detonation components, and the storage of the components in protected underground sites.

With respect to personnel reliability, the Pakistan Army conducts a tight selection process drawing almost exclusively on officers from Punjab Province who are considered to have fewer links with religious extremism or with the Pashtun areas of Pakistan from which groups such as the Pakistani Taliban mainly garner their support. Pakistan operates an analog to the U.S. Personnel Reliability Program (PRP) that screens individuals for Islamist sympathies, personality problems, drug use, inappropriate external affiliations, and sexual deviancy.³ The army uses staff rotation and also operates a “two-person” rule under which no action, decision, or activity involving a nuclear weapon can be undertaken by fewer than two persons.⁴ The purpose of this policy is to reduce the risk of collusion with terrorists and to prevent nuclear weapons technology getting transferred to the black market. In total, between 8,000 and 10,000 individuals from the SPD's security division and from Pakistan's Inter-Services Intelligence Directorate (ISI), Military Intelligence and Intelligence Bureau agencies are involved in the security clearance and monitoring of those with nuclear weapons duties.⁵

Despite formal command authority structures that cede a role to Pakistan's civilian leadership, in practice the Pakistan Army has complete control over the country's nuclear weapons. It imposes its executive authority over the weapons through the use of an authenticating code system down through the command chains that is intended to ensure that only authorized nuclear weapons activities and

operations occur. It operates a tightly controlled identification system to assure the identity of those involved in the nuclear chain of command, and it also uses a rudimentary Permissive Action Link (PAL) type system to electronically lock its nuclear weapons. This system uses technology similar to the banking industry's “chip and pin” to ensure that even if weapons fall into terrorist hands they cannot be detonated.⁶

Finally, Pakistan makes extensive use of secrecy and deception. Significant elements of Pakistan's nuclear weapons infrastructure are kept a closely guarded secret. This includes the precise location of some of the storage facilities for nuclear core and detonation components, the location of preconfigured nuclear weapons crisis deployment sites, aspects of the nuclear command and control arrangements,⁷ and many aspects of the arrangements for nuclear safety and security (such as the numbers of those removed under personnel reliability programs, the reasons for their removal, and how often authenticating and enabling (PAL-type) codes are changed). In addition, Pakistan uses deception—such as dummy missiles—to complicate the calculus of adversaries and is likely to have extended this practice to its nuclear weapons infrastructure.

Taken together, these measures provide confidence that the Pakistan Army can fully protect its nuclear weapons against the internal terrorist threat,⁸ against its main adversary India, and against the suggestion that its nuclear weapons could be either spirited out of the country by a third party (posited to be the United States) or destroyed in the event of a deteriorating situation or a state collapse in Pakistan.⁹ The fact that Pakistan has been willing to fire on U.S. soldiers during the latter's ground incursion into Pakistan's tribal areas on September 12, 2008¹⁰ removes any debate about whether Pakistan would

1 “Bin Laden has Nuclear Weapons,” BBC, November 10, 2001; “Al Qa`ida Threaten to Use Pakistani Nukes,” *Independent*, June 22, 2009.

2 Lt. Col. Zafar Ali (SPD), *Pakistan's Nuclear Assets and Threats of Terrorism: How Grave is the Danger?* (Washington, D.C.: Henry L. Stimson Center, 2007).

3 Shaun Gregory, “Nuclear Command and Control in Pakistan,” *Defense and Security Analysis* 23:3 (2007).

4 Cotta-Ramusino and Maurizio Martelline, *Nuclear Safety, Nuclear Stability and Nuclear Strategy in Pakistan* (Como, Italy: Landau Network, 2002).

5 Personal interview, General Kidwai, Director General of the SPD, Islamabad, March 2005; Personal interview, Bruno Tertrais, French Ministry of Defense, June 2007.

6 David Blair, “Code Changes ‘Secure’ Pakistan Warheads,” *Daily Telegraph*, February 9, 2004.

7 This includes the issue of pre-delegation during crises.

8 “Zardari Says Pakistan's Nuclear Weapons are Safe,” Reuters, April 27, 2009.

9 “US Has Plans to Secure Pakistan's Nuclear Weapons,” *Daily Times*, May 16, 2009.

10 “Shots Fired in US-Pakistan Clash,” BBC, September 25, 2008.

use force to resist attempts by the United States to secure Pakistan's nuclear assets without its consent. Similarly, the use of U.S. precision strikes to destroy the weapons would need to rely on perfect intelligence and would risk not only significant radiological hazards at strike targets, but also the ire of the Pakistan Army and the wider Islamic world.

Despite these elaborate safeguards, empirical evidence points to a clear set of weaknesses and vulnerabilities in Pakistan's nuclear safety and security arrangements.

Pakistan's Nuclear Security Weaknesses

When Pakistan was developing its nuclear weapons infrastructure in the 1970s and 1980s, its principal concern was the risk that India would overrun its nuclear weapons facilities in an armored offensive if the facilities were placed close to the long Pakistan-India border. As a result, Pakistan, with a few exceptions, chose to locate much of its nuclear weapons infrastructure to the north and west of the country and to the region around Islamabad and Rawalpindi—sites such as Wah, Fatehjang, Golra Sharif, Kahuta, Sihala, Isa Khel Charma, Tarwanah, and Taxila.¹¹ The concern, however, is that most of Pakistan's nuclear sites are close to or even within areas dominated by Pakistani Taliban militants and home to al-Qa`ida.

The Pakistani Taliban and al-Qa`ida are more than capable of launching terrorist attacks in these areas, including within Islamabad and Rawalpindi. They have also proved that they have good intelligence about the movement of security personnel, including army, ISI and police forces, all of whom have been routinely targeted. A series of attacks on nuclear weapons facilities has also occurred. These have included an attack on the nuclear missile storage facility at Sargodha on November 1, 2007,¹² an attack on Pakistan's nuclear airbase at Kamra by a suicide bomber on December 10, 2007,¹³ and perhaps

most significantly the August 21, 2008 attack when Pakistani Taliban suicide bombers blew up several entry points to one of the armament complexes at the Wah cantonment, considered one of Pakistan's main nuclear weapons assembly sites.¹⁴

The significance of these events is difficult to overstate. Civilian nuclear weapons sites—those sites where Pakistan's nuclear weapons are manufactured, assembled or taken for refurbishment—are typically less protected than military sites where nuclear weapons are stored, deployed and operated, a problem the Pakistan Army has now moved to address.¹⁵

The attacks at the Wah cantonment highlight the vulnerability of nuclear weapons infrastructure sites to at least three forms of terrorist assault: a) an attack to cause a fire at a nuclear weapons facility, which would create a radiological hazard; b) an attack to cause an explosion at a nuclear weapons facility involving a nuclear weapon or components, which would create a radiological hazard; or c) an attack with the objective of seizing control of nuclear weapons components or possibly a nuclear weapon. On the latter point, Pakistan's usual separation of nuclear weapons components is compromised to a degree by the need to assemble weapons at certain points in the manufacture and refurbishment cycle at civilian sites, and by the requirement for co-location of the separate components at military sites so that they can be mated quickly if necessary in crises. Furthermore, the emergence of new terrorist tactics in Pakistan (and of Pakistani terrorists in India) in which groups of armed combatants act in coordination on the ground¹⁶—sometimes in combination with suicide or vehicle bomb attacks

2007.

14 "Pakistan Bombers Hit Arms Factory," BBC, August 21, 2008.

15 The Pakistan Army has strengthened the security at some civilian sites by the deployment of extra troops and through the training of police and civilian nuclear security personnel. These measures, however, have not been widely implemented due to the immense pressure on Pakistan's security forces because of the operations in the Pashtun belt and to manpower problems partly due to terrorist attacks on Pakistan's security forces.

16 "Pakistan Taliban Chief Brags of Attack on Police," *Washington Post*, April 1, 2009.

at entry points to facilitate access—suggests the credibility of such an assault on a nuclear weapons facility; this is especially true because in a number of these attacks the security has been poor and disorganized, and the terrorists have been able to escape and remain at large.

The risk of the Pakistani Taliban or al-Qa`ida gaining access to nuclear weapons, components or technical knowledge takes on an even graver dimension once the possibility of collusion is introduced. It is widely accepted that there is a strong element within the Pakistan Army and within the lead intelligence agency, the ISI, that is anti-Western, particularly anti-U.S., and that there also exists an overlapping pro-Islamist strand.¹⁷ This is attributed to the "Islamization" of the Pakistan Army, which is the result of a number of factors: General Zia-ul-Haq opening the doors of the Pakistan Army to Islamists in the late 1970s;¹⁸ family and clan links to Islamists and extremists; the corrosive impact of what is widely seen as the Pakistan Army being asked to turn their guns on their own countrymen at Washington's behest; and the corruption of pro-Western political and military leaders.

No screening program will ever be able to weed out all Islamist sympathizers or anti-Westerners among Pakistan's military or among civilians with nuclear weapons expertise. Yet, there are at least four levels of concern about collusion.

First, those with access to nuclear weapons facilities, but not to the weapons or components themselves, could facilitate the access of terrorist groups to nuclear weapons sites, acting as a significant force multiplier for the kind of terrorist attack seen at Wah in August 2008.

11 "Expansion at Pakistan's Nuclear Sites," Institute for Science and International Security, May 19, 2009.

12 Bill Roggio, "Suicide Bomber Kills Eight at Pakistani Airbase," *The Long War Journal*, November 1, 2007.

13 Bill Roggio, "Al Qaeda, Taliban Targeting Pakistani Nuclear Sites," *The Long War Journal*, December 11,

17 This has many expressions, including the unwillingness of Pakistani soldiers to fight in the tribal areas, the involvement of Pakistan Army officers in protecting alleged 9/11 mastermind Khalid Shaykh Muhammad while he was on the run between September 2002 and February 2003, and the involvement of Pakistani officers in assassination attempts against Pakistan's nominally pro-Western president, General Pervez Musharraf.

18 Hassan Abbas, *Pakistan's Drift into Extremism* (Armonk, NY: M.E. Sharpe Press, 2005).

Second, some individuals with nuclear weapons duties could facilitate—through intelligence, or directly—access to nuclear weapons or nuclear weapons components, circumventing two-person and other procedural obstacles.

Third, technocrats with pro-terrorist or anti-Western sympathies could transfer their knowledge to al-Qa`ida or to the Pakistani Taliban. There is already the well-known case of two senior Pakistan Atomic Energy Commission (PAEC) scientists, Sultan Bashiruddin Mahmood and Chaudhry Abdul Majeed, who traveled to Afghanistan in 2000 and again shortly before 9/11 for meetings with Usama bin Ladin himself, the content of which has never been disclosed.¹⁹ Combined with the example of AQ Khan, the so-called “father” of Pakistan’s nuclear bomb who was arrested in 2004 for masterminding the largest nuclear proliferation network in history, the cases of Mahmood and Majeed point to what has been termed the “porosity” of the nuclear context in Pakistan and the real risk of nuclear technology and of related technology being sold to terrorists on the black market by those involved with Khan or with Pakistan’s nuclear weapons program.²⁰

The final risk, and one that is usually overlooked, is that the Pakistan Army could itself decide to transfer nuclear weapons to a terrorist group. One argument for this, described in Philip Bobbitt’s *Terror and Consent*,²¹ is that states can become pressurized or incentivized to transfer nuclear weapons to terrorist groups because they are responding to threats from an external power but fear the consequences of being identified as the origin of a nuclear strike. In the context of severe international pressure on the Pakistan Army—particularly by India or the United States²²—the risk

exists that Pakistan might be similarly incentivized to move to such a “coercive option.” This remains extremely unlikely in the present context, not least given the level of terrorist threat to the Pakistani state itself. Nevertheless, it forms a necessary strand of the calculus about the transfer of nuclear weapons to terrorist groups in Pakistan.²³

Conclusion

The risk of the transfer of nuclear weapons, weapons components or nuclear expertise to terrorists in Pakistan is genuine. Moreover, knowledge that such a transfer has occurred may not become evident until the aftermath of a nuclear 9/11 in Pakistan or elsewhere in the world. It remains imperative that Pakistan is pressured and supported, above all by the United States, to continue to improve the safety and security of its nuclear weapons and to ensure the fidelity of those civilian and military personnel with access to, or knowledge of, nuclear weapons. The challenge to Pakistan’s nuclear weapons from Pakistani Taliban groups and from al-Qa`ida constitutes a real and present danger, and the recent assaults by the Pakistan Army on some of these groups in FATA and in the NWFP is a welcome development. Nevertheless, more steps must be taken before the threat is neutralized and Pakistan’s nuclear weapons no longer pose an existential danger to the rest of the world.

Professor Shaun Gregory is Director of the Pakistan Security Research Unit (PSRU) at the University of Bradford in the United Kingdom. He was formerly a visiting fellow at the Institute for Strategic Studies in Islamabad (ISSI) and at the Institute for Defence Studies and Analysis (IDSA) in New Delhi. He is the author of many papers and reports on Pakistani nuclear weapons, terrorism, and state stability. His latest book, Pakistan: Securing the Insecure State, will be published in 2010.

¹⁹ Douglas Frantz and Catherine Collins, *Nuclear Jihadist: The Man Who Sold the World’s Most Dangerous Weapons* (New York: Twelve, 2007).

²⁰ Adrian Levy and Katherine Scott-Clarke, *Deception: Pakistan, the United States and the Secret Trade in Nuclear Weapons* (New York: Walker and Company, 2007).

²¹ Philip Bobbitt, *Terror and Consent* (London: Allen Lane, 2008).

²² For example, in a context in which the United States was attempting to “take out” Pakistani nuclear weapons by precision airstrikes or by the insertion of special forces teams.

²³ It is an interesting aside that Pakistan Army Chief of Staff Mirza Aslam Beg was instrumental in passing nuclear weapons technology to a regional and sectarian rival, Iran, in the 1980s simply for money for the Pakistan Army. The lesson is clear: under certain circumstances, senior figures in the Pakistan Army may be willing to transfer nuclear weapons technology, even when it is irrational to do so as in the case of Iran, empowering a regional and religious rival.