

The Decades of Distraction: Western Intelligence & Pakistan's Plutonium Programme

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Introduction

In 2011, US intelligence assessments concluded that Pakistan had steadily increased its nuclear arsenal since 2008 and that its growing capabilities would soon enable it to overtake Britain as the world's fifth largest nuclear power.¹ Moreover the expansion became a challenge to the Obama administration's national security strategy aimed at the reduction of nuclear stockpiles around the world. According to analysts the real concern was not merely Pakistan's growing weapons inventory but an increase in its production of plutonium. The report also expressed fears that Pakistan's under construction Khushab reactors would greatly increase its ability to produce a powerful new generation of nuclear weapons. ²

According to a 2014 estimate Pakistan is capable of producing 200 nuclear weapons by 2020³ making it the country with the world's fastest growing nuclear programme. According to Toby Dalton and Micheal Krepon, Pakistan's stockpile of Highly Enriched Uranium (HEU) provides it an absolute advantage in the number of weapons it could amass but its stockpile of plutonium remains smaller than India. Since Plutonium is

considered to be more suitable for use in nuclear weapons,⁴ Pakistan now wants to match India in plutonium production as well. Moreover Pakistan's quest for plutonium weapons can be attributed to the fact that Pakistan's HEU production programme was the result of "available technology and bureaucratic choices and not an optimised strategy for a nuclear weapon stockpile."⁵

Almost two decades after Pakistan's first nuclear tests, questions still persist about the purported May 30, 1998 test conducted in a separate location and different apparatus than the ones conducted two days earlier on May 28, 1998. Reports suggest that it may have been a plutonium or composite core test.⁶ Although both open source analysis and intelligence community reports remained divided about the possibility of a plutonium test, there were suggestions that Pakistan may have used plutonium provided by North Korea. The possibility of a joint Pakistan-North Korea test was also insinuated given DPRK's propensity to not conduct nuclear tests on its own territory.⁷ In 2006 President Pervez Musharraf, however, dismissed speculations about Pakistan's plutonium capabilities saying, "We do not have a plutonium weapon."⁸ Notwithstanding the probability of an actual plutonium test by Pakistan in 1998, Pakistan's growing nuclear capability is becoming a cause for concern for the US led international community amid calls for the country to end its veto on Fissile

Material Cutoff Treaty negotiations and reduce or stop fissile material production.

In order to increase both its plutonium production and reprocessing capacities, the country has constructed four reactors and also resumed construction of at least two reprocessing plants. The expansion of its plutonium programme implies that by 2016 Pakistan's annual production could reach 20 nuclear weapons,⁹ a figure that may well put its nuclear arsenal ahead of both the UK and France.

International concerns about Pakistan's growing reliance on its nuclear arsenal and the resulting focus on issues relating to vertical proliferation necessitate an investigation of the country's efforts to master the plutonium route and also how western intelligence has responded to it over the years. This paper is an effort to trace the evolution of Pakistan's plutonium programme since the 1970s. It will also examine western intelligence efforts to thwart developments related to such endeavors. Lastly it will analyze whether Pakistan's plutonium production capability occurred as a result of indigenous efforts or with the involvement of external actors. In doing so it will take into account different factors that resulted in the growth of this programme without raising alarm in the intelligence community.

The End of the Beginning

Pakistan's efforts to build a plutonium separation plant began during the 1970s when it began to seek European assistance to build a reprocessing plant. Consequently Pakistan signed a deal with France in 1973 to supply its first reprocessing plant. The plant would reprocess irradiated fuel from its safeguarded KANUPP power reactor in Karachi.¹⁰ The reactor was producing approximately 100 tonnes of spent fuel annually and the reprocessing plant would process 100 tonnes of natural uranium fuel every year. KANUPP was Pakistan's only reactor producing significant amounts of plutonium.¹¹ The same year Pakistan Atomic Energy Commission tried to replicate India's CIRUS reactor, an NRX-type natural uranium fueled, heavy water moderated plutonium production reactor called PAKNUR. However by 1974 Pakistan was forced to end the project on account of a lack of resources.¹²

Even before the United States government realised that Pakistan sought to develop enrichment technology via a secret network, its main objective was to block Pakistan's efforts to purchase reprocessing technology from France. A 2010 National Security Archive of the George Washington University thus describes:

“Concern about Pakistan's nuclear ambitions emerged after May 1974, when India staged its Peaceful Nuclear Explosion (PNE) and the US.

intelligence community, in SNIE 4-1-74, issued in August 1974, estimated that Pakistan was "likely to press ahead." The purpose of the "Memorandum to Holders" of SNIE 4-1-74 was to explore a reference ("Conclusion J") that some countries could acquire a "very modest nuclear explosive capability" without trying to produce, or "weaponise," devices suitable for bombers and missiles. The criteria used for the definition of a modest capability included possession of a small "nuclear device based on the possession of about 10 KGs or more" of plutonium or a larger amount of highly-enriched uranium, an "indigenous development programme," or a "production capability" that just skirted violations of the NPT or IAEA safeguards by not actually producing nuclear explosives."¹³

By 1977 press reports emerged about the possible transfer of blueprints of French nuclear reprocessing technology to Pakistan. According to a Department of State Action Memorandum titled "Pakistan's Purchase of a Nuclear Fuel Reprocessing Plant: The Symington Amendment and Consultations with Congress", the reports raised concerns that Congress might question the State Department's inability to invoke laws necessitating the termination of assistance to Pakistan if it was trying to develop a nuclear weapons capability. However, the Glenn Amendment did not feature in the debates over the export of reprocessing technology. While the Glenn amendment covered both reprocessing and enrichment technologies, the

Symington Amendment would go into effect only if Pakistan was importing and developing uranium enrichment capabilities.¹⁴ The authors of the memorandum argued that Congressional restrictions were not applicable as long as Washington was trying to “prevent Pakistan from acquiring a reprocessing capability.” Deputy Secretary of State Warren Christopher however remained skeptical of this recommendation and asked whether the US could be asking “for forbearance, or trouble.”¹⁵

In an April 1978 report, CIA speculated that the “odds favoring any sort of explosive programme on (Pakistan's) part would sharply diminish,” and further that because of its limited technical expertise it could take Pakistan at least five years in order to be able to build even a basic reprocessing facility. According to the report, CIA believed that Pakistan had approached China for plutonium and for technical support, but it took several years for the Agency to realise the extent of the cooperation between Beijing and Islamabad. Ultimately numerous factors, including a new government and lack of financial resources, increased “the odds against Pakistan going nuclear –perhaps for the next decade or longer.”¹⁶

By May 1978, growing US concerns about Pakistan’s nuclear development finally prompted France to default on the contract during the initial stages of construction. When the contract was formally cancelled, Pakistan

was building the main reprocessing building. France had however not supplied any major plutonium-separation equipment to Pakistan. Pakistan's efforts to find another supplier also failed. The partially completed buildings remained dormant for many years and the building was described, "as being in a state of ruin and far from complete."¹⁷ By August of the same year the State Department was confident of China's assurance that Beijing would not help Pakistan develop a reprocessing facility. Nuclear expert Robert Gallucci, however, argued in a cable that "Beijing had the capability to build a plant, *less sophisticated and versatile* than the French facility, but which could extract plutonium from the KANUPP nuclear power plant."¹⁸ Intelligence reports that emerged during December 1978 and January 1979 suggested however that Pakistan was moving steadily towards attaining uranium enrichment capability thus taking the focus off its plutonium programme. ¹⁹ It is important to note that when France finally suspended its reprocessing deal, it had already transferred 95% of the blue prints for the plant to Pakistan.²⁰ Thus even as AQ Khan championed Pakistan's enrichment programme, PAEC continued working on plutonium with assistance from several European firms.²¹ According to a 2015 ISIS report:

"The technical information from the French blueprints formed the basis for construction to resume many years later, supplemented by

many overseas illegal procurements and possibly with secret aid from China.”²²

New Beginnings

After the French reneged on their deal with Pakistan, the country started building the New Labs facility in 1980, a smaller plutonium separation plant at PINSTECH near Islamabad with assistance from several European countries. The plant became operational during the 1980s. The facility had a capacity of about one-tenth that of the unfinished plutonium separation plant. New Labs was capable of separating the plutonium from the irradiated nuclear fuel produced at the first Khushab heavy water reactor when it went critical in April 1998.²³

As predicted by an April 1978 CIA study on Pakistan’s nuclear programme Pakistan would opt for a smaller solution in the absence of a large-scale French reprocessing plant.²⁴ Moreover by 1983 Pakistan’s HEU production was well underway and the Zia government decided to revive the project that had been put on hold for so long. President Zia’s decision to pursue the plutonium programme can be attributed to two events that occurred in 1981 one after the other. The strike on Iraq’s Osirak and the destruction of centrifuges after an earthquake in Pakistan prompted the Zia regime to guard against any unforeseen challenges to Pakistan’s HEU programme.²⁵ The PAEC subsequently found a West German company to supply essential equipment for

reprocessing plants. Pakistan also forged a connection with a Belgian firm to further facilitate the building of New Labs. In fact the Belgian firm designed the over all building while Pakistan itself carried out the construction of the project.²⁶

Similarly in 1982 the PAEC approached a West German firm for the acquisition of a tritium recovery/production facility and finalised an agreement with the firm Linde AG. The US however found out about the possible deal and warned Bonn about it.²⁷ In March 1989, Mark Hibbs wrote that Linde AG could have supplied a heavy water detritiator with capability to purify the tritium gas product. The German firm however chose to ignore the warnings arguing that the facility provided to Pakistan could not produce a pure form of tritium.²⁸ Similarly a West German firm also shipped a tritium plant to Pakistan in 1985 listed as a heavy water purifier as West German regulations prohibited the sale of tritium plants. The plant was consequently installed at Khushab in 1987.²⁹

By 1983 scientists at Newlab believed they were ready to begin reprocessing using the PUREX method albeit with concerns of inadvertent radioactive releases. New Labs was launched three years prior to Pakistan's acceptance of IAEA safeguards on the French reprocessing project. A 1979 IAEA query about the New Labs facility resulted in a Pakistani response whereby Pakistan maintained that there was no reprocessing facility in Pakistan

that the country was obliged to inform the Agency about. Two years later, in 1985, a CIA assessment report calculated that New Labs contained a pilot scale fuel reprocessing plant, a fuel handling and refabrication facility, a plutonium metallurgy lab as well as a waste treatment lab.³⁰

Hot tests were conducted at the Labs in 1987 thus making Pakistan fully prepared to handle any spent fuel for reprocessing made available to PEAC by 1987. By 1989 it had expanded considerably and could also handle all the spent fuel available from the Khushab reactor.³¹ According to July 1998 article by Mark Hibbs, progress at the Khushab construction site was being constantly monitored by US intelligence satellites. However intelligence agencies could not positively identify any reprocessing plant, either operating or under construction in Pakistan which would be large enough to handle spent fuel from the natural uranium-fueled Khushab reactor, but that a number of locations were suspected of serving as a location for plutonium separation activities. Moreover intelligence data and customs intelligence information, conclusively pointed to a gradual intensification of research and development activities by Pakistan in the area of plutonium separation. Regardless of international efforts to apply crippling economic sanctions to Pakistan however “it is now pretty clear that Pakistan is going to go ahead with its weapons program and that the

logic dictates that they will use the plutonium” generated by Khushab.³²

In the early 2000s, Pakistan started building additional Khushab reactors, adding three reactors in total. Pakistan also added a new building at New Labs, for plutonium separation and doubled the site’s annual capacity to process spent fuel. However the New Labs facility is not believed to be large enough to handle all the irradiated fuel from the four Khushab reactors, which have become operational in the last several years. Consequently Pakistan resumed construction of the old reprocessing plant at Chashma.³³ Experts detailed Chinese assistance to Pakistan in the construction of plutonium production reactor at Khusab and an unsafeguarded plutonium reprocessing facility at Chasma, providing Pakistan with a dependable source of plutonium for use in nuclear weapons.³⁴ Notwithstanding Western speculations however the Chashma reactors built with Chinese assistance run on high burn-up, produce electricity and are not good sources of weapons grade plutonium. Moreover the reactors remain in good standing with the IAEA as well.³⁵

The question of Chinese assistance with the Khushab reactor emerged even as the construction of the Khushab reactor was under progress. The international community was skeptical of Pakistan’s ability to produce an indigenous nuclear reactor. In 1992 for example a state department study asserted

that Pakistan lacked the necessary infrastructure to manufacture or test critical nuclear components. Moreover, the report also questioned Pakistan's ability to indigenously produce important materials including beryllium, zirconium, lithium and graphite. According to Feroz Hassan Khan however:

“this report seemed unaware of the PAEC's 1986 success in the indigenous mining of uranium and zirconium and preparation of zirconium alloys or of its already existing fledged national Centre for Non Destructive Testing. In contrast, a 1988 Nuclear Fuel report suggested, “PAEC is very proud of its present capabilities in enrichment, reactor technology and fuel fabrication and there was no doubt that PAEC had the means to build the Khushab Plant.”³⁶ Another factor which further reinforces this claim and also dismisses the notion of any Chinese assistance with the Khushab reactors is the existence of a US-China bilateral nuclear cooperation agreement that clearly provides for a cutoff of US nuclear cooperation if a country “assisted, encouraged, or induced any non-nuclear-weapon state to engage in activities involving source or special nuclear material and having direct significance for the manufacture or acquisition of nuclear explosive devices, and has failed to take steps which, in the President's judgment, represent sufficient progress toward terminating such assistance, encouragement, or inducement...”³⁷

According to a 2011 article by Mark Hibbs in the arms control wonk thus,

“US President Bill Clinton in 1998, after years of fretting about China’s assistance to undeclared nuclear activities in places like Iran and Pakistan, in order to bring the agreement into force, had provided a presidential certification, originally called for under P.L. 101-246—a measure passed after the Tiananmen Square crackdown in 1989—that China “has provided clear and unequivocal assurances to the United States that it is not assisting and will not assist any non-nuclear weapons state, either directly or indirectly, in acquiring nuclear explosive devices or the materials and components for such devices.”³⁸

According to Hibbs analysis, if the US had found out that China was helping Pakistan build a weapons reactor, it would be a forgone conclusion that China’s nuclear industry market worth \$50-billion would be at stake. Moreover if news of any Chinese work at Khushab was leaked, there would be “a diplomatic and economic meltdown, because the US-China nuclear agreement has language in it which refers to Section 129 of the Atomic Energy Act.”³⁹

Western Distractions

Although China’s name usually emerges with reference to its assistance with Pakistan’s nuclear programme, another relevant albeit

less talked about factor is the role played by successive US governments and the intelligence community in enabling Pakistan to pursue its nuclear programme both during the 1970s and the 1980s. Since it is impossible to acquire PU technologies clandestinely, Pakistan made little attempt to hide its acquisition of Plutonium technologies, hence the PAEC announcement that acquisition and development of nuclear technology was Pakistan's inalienable right and that nothing in the world would stop the country from acquiring the technology.⁴⁰ According to Brig. Feroz Hassan Khan, the last two decades of the twentieth century were influenced by global challenges that altered not only the regional landscape but had a profound effect on Pakistan's domestic polity as well. In his words therefore,

“These events essentially proved to be ideal distractions for Pakistan to continue progress on the Plutonium route. By the end of the first decade of the twenty first century Pakistan's potential for producing PU had far exceeded expectations.”⁴¹ Lending credence to Hassan's analysis is Adrian Levy's account of how Western governments and intelligence alike chose to remain quiet about the steady development of Pakistan's nuclear programme. According to Levy, in 1986-1987 for example Presidential appointees went as far as tipping off the Pakistani governments so that US customs would not catch Pakistani Agents involved in nuclear smuggling. The time period coincided with Pakistan's quest for

both uranium and plutonium technologies.⁴² Incidentally the time period also coincided with the Afghan war and the growing US reliance on the Mujahedeen. However in 1990 when the Afghan War ended, the US “cut Pakistan adrift” and terminated aid as well. Seymour M Hersh describes the Pakistan-US relationship:

“The tough, albeit late, new American policy toward a nuclear-armed Pakistan, as it was relayed by President Bush to Ms. Bhutto, did not play well in Islamabad. “The Paks understood us better than we understood ourselves,” one informed American official explained. “They knew that once the Soviets were whipped in Afghanistan we wouldn’t need them anymore. Would we unilaterally defend Pakistan? Never. Our relationship with Pakistan was to counter the Soviet-Indian relationship. The Pakistanis knew that time was limited. And that’s why they went balls out on the nuclear programme. Benazir never had a chance. If they held back the bomb from us, they could have held it back from her as well. It was too serious.”⁴³

The trend became more pronounced during the next decade until a few days before 9/11 when the George Bush administration seemed a ready for a change in Policy on Pakistan. In the months following September 11, 2001 and the ensuing war on terror, the US policy stance worked once again in Pakistan’s favour even as Iraq emerged as the next logical step in the war on terror and that “Pakistan could

not be allowed to eclipse that script.”⁴⁴

Similarly in March 2013, China and Pakistan signed a secret agreement whereby the state-run China National Nuclear Corp. (CNNC) would construct a 1,000-megawatt power plant at Chashma, located in the northern province of Punjab. The Chinese government issued an internal notice to officials within its nuclear establishment and to regional political leaders urging care to avoid any leaks of information about the nuclear sale that Beijing expected would be controversial. According to reports, the reactor deal had been in the works for several years and prompted high-level US government efforts to block the sale because of concerns it would enhance Pakistan’s nuclear weapons programme. According to observers however, when the deal was finally signed in 2013, the Obama administration chose not to criticise it publicly owing to Beijing’s role in the Iran and North Korean nuclear talks.⁴⁵

Conclusion

Pakistan’s plutonium programme was developed using numerous individual parts that were procured over time using European firms. Its mastery of the plutonium route was a decade long effort that became possible not only due to Pakistans unwavering resolve to acquire weapons but also circumstances that necessitated Western intelligence, particularly US intelligence to look the other way while reporting the steady development of the

country's nuclear programme. In the long run, western distractions proved to be ideal developments that enabled Pakistan to continue progress on its plutonium programme. The mastery of the Plutonium route thus enabled Pakistan to produce more compact and smaller weapons to further enhance its nuclear forces.

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