

CONCEPTUALIZING NUCLEAR SECURITY OF PAKISTAN: A RESPONSE TO INTERNATIONAL REGIMES

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Abstract

Terrorism is a challenge to international peace and stability, but nuclear terrorism risks the existence of entire world. Nuclear safety poses another challenge that remained priority on the agenda in all nuclear security summits (NSS). Nuclear Security Summit established a forum for cooperation among international nuclear actors. International mainstream media often created hype of nuclear insecurity in the wake of terrorism in Pakistan. Pakistan's proactive nuclear diplomacy at all Nuclear Security Summits (2010, 2012, 2014 and 2016) not only highlighted Pakistan's concerted efforts to safeguard nukes but also extended support to those who are struggling to improve nuclear security. International Atomic Energy Agency's acknowledgement of Pakistan's ramped up efforts increased its credibility and enlists Pakistan as a potential candidate for membership of Nuclear Suppliers Group (NSG). These NSS provided a platform of cooperation to nuclear actors and ensured relative nuclear security. This paper analyses the institutional response of Pakistan's nuclear security to international concerns and highlights measures to beef up security of nuclear assets. It also dispels any chance of nuclear terrorism in Pakistan. It also argues to dispel misapprehensions about Pakistan's strategic assets.

Key words: Nuclear Safety, Nuclear Security, Nuclear Terrorism, Nuclear Suppliers Group

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Introduction

Nuclear weapons changed war dynamics after their invention and usage at Hiroshima and Nagasaki. Since then nuclear weapons have been the priority of nations to acquire them to increase their respective security. Major Powers were prompt to develop this capability to attain insurmountable security. United States, Russia, United Kingdom, France and China, the permanent members of United Nations Security Council (UNSC) developed nuclear weapons during either at the beginning or the peak of cold war with the exception of the United States. The United States was the first to declare nuclear weapons by testing them during war times. Nuclear weapons basically were developed by those states that had strong enemies and wanted to aggrandize their security against potential enemies as USSR developed against the U.S., United Kingdom being the U.S. ally and a former empire had the privilege to maintain them against any future threat. France had faced Germany in World War II. China was a communist power and wanted survival against the threat of capitalist bloc. India developed weapons against China and Pakistan. Pakistan acquired nuclear technology to defend itself against Indian threat and to maintain the balance of terror with India.¹ Those strategic weapons which were unquestionably a source of security for nations at some point also became insecure at a later stage. Wave of terrorism across the globe in post 9/11 era led policy makers to think that these nuclear weapons may fall into the hands of terrorists and they may either seize control of nukes or be able to procure a crude nuclear weapon. It was Barack Obama's brainchild to establish a regime which could oversee the security measures of nuclear weapons and also provide a platform to nuclear actors to cooperate in achieving high levels of security against any possible threats of nuclear terrorism. There was much concern and speculations in international community about the nukes of Pakistan.²

The former U.S. President Barack Obama in 2009 made a speech at Prague about the threat of nuclear terrorism. Al-Qaida and other terrorist groups are struggling to get control of nuclear weapons and they surely would terrorize the world once they obtain it. Large stockpiles of nuclear weapons, smuggling of sensitive nuclear technology and materials by black market pose a massive threat that terrorist organizations may acquire them if not secured.³ He urged world leaders to respond to such an imminent threat

¹ Rizwan Naseer Musarat Amin, "Sino-Pakistan Maneuvering to Balance the Power in South Asia," *South Asian Studies* 30, no. 2 (2015): 2

² Michael Clarke, "Pakistan and Nuclear Terrorism: How Real Is the Threat?," *Comparative Strategy* 32, no. 2 (2013): 98-111

³ NPR, "Nuclear Posture Review Report April 2010," https://dod.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf, April 1, 2010

by securing loose nukes around the world.⁴ Obama formalized this effort by announcing Nuclear Security Summit (NSS). First Nuclear Security Summit (NSS) was held in Washington on April 12-13, 2010 that summit brought 46 nations and three international organizations on a single platform to hammer out solution to the risks of nuclear terrorism. It was for the first time that major powers and nuclear armed nations adopted an advanced common approach to maximize nuclear security. Participating countries agreed to take their own measures to safeguard their respective nuclear materials, civil nuclear reactors and also boost international cooperation concerning that.⁵

Conceptualizing Nuclear Security of Pakistan

Pakistan's nuclear program still is a secret that rest of the world knows very little about the program. It is primarily because of the security concerns and the flagitious propaganda against it. Even the leading think-tank or research institutes have mere estimates about the amount of weapon-grade Highly Enriched Uranium and Plutonium. There are also estimates about the number of nuclear weapons that Pakistan possesses and is likely to make in the years to come. Because of the dearth of information available to outside world there are many misapprehensions about the nuclear security of Pakistan. Such misapprehension about the Pakistan nukes provide blurred picture to international regimes and rest of the international community. Among many other some critiques question Pakistan's nuclear security without any credible data. Sajid Farid Shapoo (Inspector General of Indian Police) published a piece in *The Diplomat* on February 01, 2017 which exaggerated the risk to Pakistan's nuclear assets that the gravest threat to Pakistan's nuclear weapons is posed by insider-Jihadi collaboration.⁶ He also referred to Mehran Naval base attack in 2011 which was allegedly done by the 313 Brigade (An affiliated terrorist group of Al-Qaeda). He also claims that in the past five years, there have been at least half a dozen attacks on the facilities that presumably store nuclear weapons. Mentioning three terrorist attacks on Kamra Air Base near Islamabad, he maintains that Pakistan is vulnerable to nuclear terrorism. Another op-ed published in *The New York Times* on April 20, 2017 by Rahmatullah Nabil who served as a head of the Afghanistan's National Directorate of Security. In his piece "The World Must Secure Pakistan's Nuclear weapon" he levels allegations that Pakistan is the hotbed of global Jihadism where military and intelligence

⁴ Council on Foreign Relations, "Loose Nukes," <https://www.cfr.org/backgrounder/loose-nukes>, January 1, 2006.

⁵ Mary Beth Sheridan, Obama Secures 47-Nation Pact at Nuclear Summit, *Washington Post*, April 14, 2010.

⁶ Sajid Farid Shapoo, The Dangers of Pakistan's Tactical Nuclear Weapons, *The Diplomat*, February 1, 2011.

agencies use terrorist networks to advance their regional interest.⁷ He also urges international community at the platform of the International Atomic Energy Agency and the United Nations Security Council to take action to prevent catastrophe of possible nuclear terrorism.⁸ Similarly another scholar Joseph V. Micallef, author of the best selling “Military History and World Affairs” published in *Huffington post* that instability in the region raises risks that Pakistan’s nuclear weapons may either fall into the hands of rogue elements or international jihadist groups.⁹ Such critiques of Pakistan’s nuclear security aid misconceptualising nuclear safety and security in Pakistan. In fact Pakistan has entered into final phase of combating terrorism. Through the decisive *Raddulfasad operation* it successfully smashed strong terrorist networks and achieved better levels of security and stability in the country. Even when Pakistan was fighting war against terrorists in Federally Administered Tribal Areas (FATA) between 2002 and 2013, no terrorist network ever hit strategic sites of Pakistan. Now the chances of nuclear terrorism in Pakistan are minimal. Not mere based on speculation one can assume that Pakistan’s nuclear security standards are better than India instead the credible data may validate the veracity of such statement. Ankit Panda who covered *The 2014 Nuclear Threat Initiative (NTI) Index* for *The Diplomat* commented that “India’s low ranking, which placed it below both China and Pakistan for nuclear materials security” speaks volumes of Pakistan’s nuclear security.¹⁰ Based on the available data, it may be conceptualized that Pakistan has achieved sufficient levels of nuclear security and other misapprehensions about the nuclear program are false and baseless. Pakistan’s proactive participation in Nuclear Security Summits has increased its credibility in international community as a responsible nuclear actor.

Nuclear Terrorism: A Real Danger?

Nuclear terrorism is a real threat in the contemporary times. According to the Pentagon review, nuclear terrorism is the most immediate and extreme danger that United States is facing today. To inflict massive devastation only 25 kilogram of Highly Enriched Uranium (HEU) is sufficient that can fit into a small suitcase.¹¹ It means that terrorists may steal

⁷ Rahmatullah Nabil, The World Must Secure Pakistan’s Nuclear Weapons, *New York Times*, April 20,2017,

⁸ Ibid

⁹ Joseph V. Micallef, The Other Bomb: Pakistan’s Dangerous Nuclear Strategy, *Huffington Post*, December 06,2017,

¹⁰ Ankit Panda, Just How Secure Are India and Pakistan’s Nuclear Security Materials, *The Diplomat*, January 21,2016,

¹¹ Centre for Arms Control and Non-Proliferation, “Nuclear Terrorism: a Clear and Present Danger,” <https://armscontrolcenter.org/nuclear-terrorism-a-clear-and-present-danger/>, August 1, 2016,

the stuff of a bomb like HEU or plutonium; though they cannot make a nuclear bomb but could construct a crude bomb. Such crude bomb exploded into an urban target may kill hundreds of thousands.¹² Graham Allison answers to the question that could terrorist steal HEU or Pu? “The answer is ‘Yes’ ”.¹³ The number of incidents from 1993-2008 involving theft of nuclear or other radioactive material are 421 which were reported to IAEA. According to Mathew Bunn the only way that can minimize chances of nuclear terrorism is consolidating nuclear weapons and radioactive material. To him nuclear security will increase after the implementation of Nuclear Security Implementation Initiative agreed upon by all the participating states to have regular reviews of their nuclear security arrangements.¹⁴

Pakistan’s Concerted Cooperation on Nuclear Security

In the first Nuclear Security Summit (2010) held at Washington D.C Pakistan’s Prime Minister Yousef Raza Gillani met the U.S. President Barack Obama and the latter acknowledged better standards of Pakistan’s nuclear safety and security. After the 2010 NSS, a non-binding communiqué was issued recognizing nuclear terrorism as one of the most pressing challenges to international peace and security.

In the NSS (2010) all the participants reaffirmed the fundamental responsibility to advance the agenda of nuclear security. Nuclear related material (highly enriched uranium and plutonium) requires special precautions to store and secure. It was agreed that all states should implement nuclear security commitments and also urged others to join it. It also reaffirmed the role of IAEA in nuclear security framework. Much needed capacity building for nuclear security was agreed upon at multilateral, bilateral and regional level. The NSS 2010 also underlined the importance of effectively preventing illicit nuclear trafficking. Participants expressed to support implementation of strong nuclear security practices. After the NSS 2010, Iran hosted a conference on *Disarmament and Non-Proliferation* in April, 2010 and another conference in May, 2010 on *Treaty*

¹² Joe Cirincione, “Nuclear Terrorist Threat, Bigger Than You Think,” <https://edition.cnn.com/2016/04/01/opinions/nuclear-terrorism-threat-cirincione/index.html>, accessed March 21, 2018,

¹³ Graham Allison, “Nuclear Terrorism Fact Sheet,” Belfer Centre for Science and International Affairs, April 1, 2010, <https://www.belfercenter.org/publication/nuclear-terrorism-fact-sheet>.

¹⁴ Matthew Bunn, Martin B. Malin, Nickolas Roth, William H. Tobey, “Preventing Nuclear Terrorism: Continuous Improvement or Dangerous Decline?,” Belfer Centre for Science and International Affairs, accessed July 12, 2018, <https://www.belfercenter.org/sites/default/files/legacy/files/PreventingNuclearTerrorism-Web.pdf>.

on the non-Proliferation of Nuclear Weapons (NPT) was held at the United Nations.¹⁵

The National Command Authority (NCA) is the apex decision making body of nuclear weapons as Pakistan's Prime Minister is the chairman of this strategic body. Basically the Strategic Plans Division (SPD) acts as a secretariat of NCA. The SPD supports NCA in multiple ways as it provides technical solutions, personnel reliability program and intelligence capabilities to deal with issues like nuclear security, non-proliferation and accidents. The NCA control matters related to policy, procurement and nuclear security. To augment Pakistan's nuclear security, Pakistan's nuclear security regime is based on multi-layered defence i.e. threat from insider, outsider or cyber-threat. "Pakistan's nuclear security regime is guided by five Ds – deter, detect, delay, defend and destroy". The Special Response Force (SRF) ensures security of nuclear assets.¹⁶

Pakistan being a responsible nuclear state welcomed Obama's initiative for securing nuclear weapons and bewaring international community about risk of loose nukes falling into the hands of terrorist organizations. Already established regimes and organizations have been focusing on the matters of nuclear proliferation, disarmament and the issues of danger of nuclear terrorism. The NSS (2010) claimed to strengthen nuclear security to eliminate the chances of terrorists' acquiring nukes. That summit also brought stakeholders on a single platform where they could interact about maximizing cooperation in the field of securing nuclear technology. Pakistan chose to be the part of this summit because of the non-obligatory nature of this regime. Pakistan and India have not signed Nuclear Non-proliferation Treaty (NPT) and Comprehensive Test Ban Treaty (CTBT), but they could still be engaged in dialogue with the permanent members of United Nations Security Council (UNSC). Pakistan hoped to dispel misperceptions about the nuclear safety and security of Pakistan that western mainstream media often hyped about it. International mainstream media often made headlines about the fear of nuclear terrorism in Pakistan and possible India-Pakistan nuclear exchange.¹⁷ But through this forum Pakistan got an opportunity to present facts about the standards of its nuclear safety and security. Obama's rationale of establishing NSS was based on the

¹⁵ Matthew Berger Eli Clifton, "Ngos Praise u.s. Leadership On Nukes," Internet Archive, April 12, 2010, https://web.archive.org/web/*/http://www.ipsnews.net/news.asp?idnews=51015.

¹⁶ Nuclear Security Summit 2014, "National Statement Pakistan," Harvard University, accessed March 22, 2018, http://projects.iq.harvard.edu/files/nuclearmatters/files/pakistan_national_statement_0.pdf.

¹⁷ David Leigh, Wikileaks Cables Expose Pakistan Nuclear Fears, *Guardian*, November 30, 2010, <https://www.theguardian.com/world/2010/nov/30/wikileaks-cables-pakistan-nuclear-fears>.

preventing theft of nuclear weapons and related materials and nuclear sabotage.

Former Director General of the International Atomic Energy Agency (IAEA) Mohammed El-Baradei author of *The Age of Deception: Nuclear Diplomacy in Treacherous Times* (2011) and *Atoms for Peace: A Pictorial History of the International Atomic Energy Agency* (2007) stated “Nuclear terrorism is the most serious danger the world is facing”¹⁸. For terrorist, if they get control of nuclear material, only with an amount of 25 kg, Highly Enriched Uranium (HEU), they could possibly make an improvised nuclear device. That can work as nuclear weapon and may have capacity to wreak massive destruction.¹⁹ Graham Allison, a Douglas Dillon Professor of Government at Harvard Kennedy School and a former Director at Belfer Center writes that responsible nations of the world can prevent nuclear terrorism with a simple approach, the UNSCR 1887 calls upon all the member states to improve the standards of nuclear security by securing nuclear materials. The UNSCR 1887 seeks progress for further steps towards disarmament.²⁰ The UNSC is the diplomatically rigorous platform to cooperate on this issue of global concern. Pakistan being a non-signatory of NPT and CTBT does not encourage any steps at international forums towards disarmament, because it follows the footmarks of other nuclear actors. Secondly, these strategic weapons ensure security of Pakistan against any external threat and also play pivotal role in maintaining credible minimum deterrence against India.

Pakistan and India are strong contenders for Nuclear Suppliers Group (NSG) membership and the criteria is that a country with better non-proliferation record and better levels of nuclear security may get entrance to NSG. India as an aspiring state to get permanent membership of the UNSC with ‘veto power’, became a proactive contributor to safety and security of nuclear weapons by implementing 1540 United Nations Security Council Resolution (UNSCR). Adopted in 2004 under ‘Chapter VII’ of the United Nations Charter, UNSCR 1540 formally establishes the proliferation and possession of WMD by non-state actors as “a threat to international peace and security.”²¹ To project efforts in compliance with UNSCR 1540, India has conducted training courses on physical protection of nuclear weapons

¹⁸ Graham Allison, “Nuclear Terrorism Fact Sheet,” Belfer Centre for Science and International Affairs, April 1, 2010, <https://www.belfercenter.org/publication/nuclear-terrorism-fact-sheet>.

¹⁹ Carson Mark, Theodore Taylor, Eugene Eyster, William Maraman, and Jacob Wechsler, “Can terrorists build nuclear weapons.,” <http://www.nci.org/k-m/makeab.htm>, accessed May 17, 2018,

²⁰ United Nations Security Council, “Resolution 1887 (2009),” United Nations Security Council Resolution, September 24, 2009, <http://unscr.com/en/resolutions/doc/1887>.

²¹ United Nations Security Council, “Resolution 1540 (2004),” United Nations Security Council Resolution, April 28, 2004, [http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1540\(2004\)](http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1540(2004)).

and nuclear installations; under the aegis of IAEA .Now New Delhi is willing to offer the training course on the protection of nuclear weapons and their installations as a regional training centre in future.²² It goes one step further by offering legislation on Organization for the Prohibition of Nuclear Weapons (OPNW).

Indian diplomacy at international level got more vivacious to project its image as a responsible nuclear state that has a strong track-record of nuclear non-proliferation and no incident of proliferation ever surfaced. Indian leadership envisages it as global player including membership of Nuclear Suppliers Group (NSG).²³ The initiative of NSS has not only improved Pakistan's security but also India's as well which augurs well for regional peace and stability.

Drivers of Nuclear Security Summit

Director General of the IAEA in 2008 stated that terrorist organizations were struggling to acquire nuclear weapons and if they succeed, they will not wait to use it. The IAEA reports also pinpointed that some of the components of nuclear weapons were in black market and about fifteen such cases were reported in 2008 alone.²⁴ Osama Bin Laden tried to buy nuclear material from black market in February, 2001. A Saudi fugitive provided trail in U.S. court about Bin Laden's intention to buy Uranium worth of \$1.5million in Sudan.²⁵ Al-Qaeda is not alone in attempts to acquire nukes but other transnational terrorist organizations made similar attempts to gain access to nuclear technology. A terrorist group from Japan, Aum Shinrikyo has also been involved in clandestine efforts to acquire nuclear technology.²⁶ The NSS has been an attempt to avert any such accidents or proliferation incidents which can threaten regional peace and lives of millions.

²² Nuclear Threat Initiative, "India 1540 Reporting," Nuclear Threat Initiative, September 14, 2015, <http://www.nti.org/analysis/articles/india-1540-reporting/>.

²³ TNN, Nsg Still Unsure On India's Membership, *Times of India*, June 25, 2017, <https://timesofindia.indiatimes.com/india/nsg-still-unsure-on-indias-membership/articleshow/59304868.cms>.

²⁴ Tanya Ogilvie-White and Jack Boureston, "Seeking Nuclear Security through Greater International Coordination," Council on Foreign Relation, March 19, 2010, <https://www.cfr.org/report/seeking-nuclear-security-through-greater-international-coordination>.

²⁵ Julian Borger, Ewen MacAskill, Bin Laden Is Looking for a Nuclear Weapon: How Close Has He Come?, *Guardian*, November 07, 2001, <https://www.theguardian.com/world/2001/nov/07/afghanistan.terrorism>.

²⁶ Matthew Bunn, Martin B. Malin, Nickolas Roth, William H. Tobey, "Preventing Nuclear Terrorism: Continuous Improvement or Dangerous Decline?," Belfer Centre for Science and International Affairs, accessed July 12, 2018, <https://www.belfercenter.org/sites/default/files/legacy/files/PreventingNuclearTerrorism-Web.pdf>.

Some of the critiques of Pakistan's nuclear program express dissatisfaction over Pakistan's nuclear safety and security. They fear nukes falling into the hands of terrorists. The counter-argument for such propaganda is to understand about the safety and security of Pakistan's nuclear weapons. In fact, very limited information about Pakistan's nuclear weapons is known to other countries. Even the leading research organization in the world, do not know the exact size of Pakistan's nuclear arsenal and its capacity. There are only estimates that help other countries make assessment about Pakistan's nuclear program and their numbers. Pakistan's strategic weapons are under the control of military's Strategic Plans Division (SPD). There were fears during the time of war against terrorism and political instability in the country. The SPD launched a public relations offensive to counter scaremongering over nuclear assets' security. Pakistan rules out any fear of nuclear weapons falling into hands of militants.²⁷ Nuclear terrorism is a nightmare because of its risk of massive destruction. The first Nuclear Security Summit was an attempt to secure nuclear materials and about 1500 kilogram of highly enriched Uranium was eliminated within the span of 6 years. Other hallmark steps were also taken by states including establishing centers of Excellence, education, research and training. The NSS in the very early phase because of the training and research centre managed to make countries Highly Enriched Uranium (HEU) risk free.

Japan's nuclear emergency has been a precedent that safety of nuclear reactors was also a challenge even a natural disaster could risk populace of nuclear state. Fukushima's nuclear disaster as a consequence of Tsunami in March, 2011 caused disabling of power supply to three Daiichi nuclear reactors. Cores of three reactors melted and caused radioactive release. For Japan the task was to cool off and prevent the release of radioactive materials. There were about 100,000 people evacuated from the areas to avoid any deaths and sickness from radiation.²⁸ Fukushima incident had greater impact on other states with nuclear reactors as many states took initiatives to strengthen nuclear safety measures.

The objective of NSS was to secure the material throughout the world in four years. The removal of fissile materials and safety efforts were the early focus of NSS, but the NSS broadened its scope to include the nuclear safety, international governance issues and radiological sources.²⁹

²⁷ Reuters, Q A: Pakistan's Nuclear Weapons, safe or Not?, *Reuters*, May 23, 2011, <https://www.reuters.com/article/us-pakistan-attack-nukes/qa-pakistans-nuclear-weapons-safe-or-not-idUSTRE74M07J20110523>.

²⁸ Bettina BF, Wittneben, "The Impact of the Fukushima Nuclear Accident On European Energy Policy," *Environmental Science and Policy* 15, no. 1 (2012): 3,

²⁹ Bowen, W., M. Cottee, H. Christopher, L. Lentini, and M. Moran, *Nuclear Security Briefing Book* (London: King's College London, 2016), 15.

Threat of Nuclear Terrorism in Pakistan

The Nuclear Security Summit 2012 held at Seoul, focused on 11 areas including role of the IAEA, global nuclear security architecture, nuclear materials, radioactive substances, transportation of Nuclear material, nuclear safety and security, nuclear forensic, preventing illicit trafficking, international security cooperation, information security and nuclear security culture. Inferred from the previous NSS 2010 main issues of 2012 Summit were:³⁰

- Cooperative measures to prevent threat of nuclear terrorism
- Protecting nuclear and related materials
- Preventing illicit trafficking of nuclear materials.

Seoul Communiqué advanced agenda for securing nukes and preventing radiological terrorism by taking sufficient measures.

Bunn, Harrell and Malin (March 2012), put forth in their research entitled “*Progress on Securing Weapons and Materials: The Four-Year Effort and Beyond*” that put more emphasis on the primary task of the world to avoid theft of nuclear materials. Pakistan, undeniably took measure to secure nuclear materials but chances of nuclear terrorism are not zero all over the world. If terrorists could hit Pentagon in 2001, then any country on the planet, irrespective of power is prone to nuclear terrorism. By adopting stringent measures Pakistan also reduced risk of nuclear theft. Barack Obama, the former President of the United States acknowledged that Pakistan’s nuclear program is secure but U.S. government still showed greater concern over the security of Pakistan’s nuclear assets.³¹ At the same time some concerns like some insider may help terrorists to make the bomb or another unwarranted fear that terrorists may take over Islamabad and new Taliban-like government would pose greatest challenge to world through nuclear blackmail. Taliban-like government in Islamabad is highly unlikely and Pakistan’s nuclear establishment keeps a stricter control of the secrecy of the matter. But risk of nuclear sabotage from India is more realistic than hypothetical Taliban-style government in Pakistan. India has been proactive stalling Pakistan’s research and development and also maligning Pakistan’s image internationally as an agent of proliferation. Though Pakistan is in cooperation with the United States but the former does not permit even the U.S. experts to physically visit Pakistan’s nuclear arsenal. Secrecy of Pakistan’s nukes is also utmost concerning Pakistan’s nuclear doctrine.³²

³⁰ Nuclear Security Summit 2014, “National Security Summit,” Nuclear Security Summit 2016, accessed June 27, 2018, <http://www.nss2016.org/past-summits/2014/>.

³¹ Pakistan’s Steps for Nuclear Security Appreciated by Obama, *Pakistan Today*, April 04, 2016, <https://www.pakistantoday.com.pk/2016/04/04/pakistans-steps-for-nuclear-security-appreciated-by-obama/>.

³² Sadia Tasleem, “Pakistan’s Nuclear Use Doctrine,” Carnegie Endowment, accessed August 01, 2018, <http://carnegieendowment.org/2016/06/30/pakistan-s-nuclear-use-doctrine-pub-63913>.

Hans M. Kristensen & Robert S. Norris in “Pakistan’s nuclear forces, 2011” quote International Panel on Fissile Materials on inventory of Pakistan’s nuclear weapons by late 2010 that “Pakistan’s inventory of nuclear weapons was approximately of 2,600 kilograms (kg) of highly enriched uranium (HEU) and roughly 100 kg of weapon-grade plutonium (International Panel on Fissile Materials, 2010). This amount is enough to produce 160 to 240 warheads”.³³ According to Arms Control Association, Indian Nuclear Arsenal is estimated to have at least 520 kilograms of plutonium which is enough to make between 100 and 120 nuclear devices.³⁴ Given such a hostile nature of relations between both countries and abundance of nuclear weapons, fear of escalation alerted international community. Therefore, Participation of both the countries in the NSS was welcoming step towards achieving nuclear security in South Asia.

After the hunting of Osama Bin Laden in Operation Neptune Spear by U.S. navy SEALs in Abbottabad, Pakistan it was a perception among international community that Osama Bin Laden was residing in Pakistan’s strategically important area, very close to Pakistan’s military academy and therefore potential terrorists may steal nuclear weapons or related technology. Observers also wondered that U.S. had done operation deep into Pakistan and if Pakistan’s Nuclear weapons were safe from any possible U.S or Indian incursion. To dispel that concern it is argued that Pakistan’s nuclear weapons are dispersed in the country and installed on various unknown locations that are under extreme security and secrecy. But the weapons are not installed in a ready to launch form rather unassembled form with the cores separated from weapons and also stored separately from delivery system.³⁵ Such an arrangement of nuclear security provides a foolproof security to Pakistan’s nuclear weapons which make it impregnable to any infiltrator.

Some of the critiques pose questions that during 2009 Pakistan experienced surge in terrorist attacks even Pakistan army’s general headquarters also came under attack from terrorists, Pakistan’s naval base Mehran also was attacked, in the light of such events critiques opine that any undesirable incident is likely. Any nation combating terrorism certainly bears loss of lives as well as material. The U.S. and allied forces are under multiple attacks in Kabul since 2001 and there is no end in sight. Indian outposts in Pathankot and Uri were attacked by terrorists in 2016. Therefore, it may not be established that the U.S. and India may not secure nuclear weapons. Japan’s Fukushima incident (2011) revealed that Japan needs to bolster its nuclear safety against any natural disaster but it may not be assumed Japan is

³³ Hans M. Kristensen, Robert S. Norris, “Pakistan’s Nuclear Forces, 2011,” *Bulletin of the Atomic Scientists* 67, no. 4 (2011): 92,

³⁴ Kyle Mizokami, This Is Why the World Should Fear India’s Nuclear Weapons, *The National Interest*, May 27, 2017,

³⁵ Kristensen (2011), 93

incapable of guarding nuclear reactors. There is a common perception that major threat to nuclear assets comes from physical threats but cyber one is also potential to breach nuclear security.

Dr. Andrew Futter of Leicester University in an article answered important questions about vulnerability of U.K's nuclear arsenals from cyber attack. He answered "We must assume the answer is yes," He also highlighted that the most vulnerable system are modern and complex .The nuclear software can be altered during process of their building and hackers could manipulate the information of the system that states solely rely on. Futter underlines that three things surprised him

- I. Overwhelming confidence of governments about their capability to protect nuclear weapons
- II. Cyber debate was hindered by lack of common understanding about what cyber meant?
- III. Human-computer interface are easier target in cyber operations.³⁶

Pakistan faced less cyber attacks than other advanced countries. Pakistan's nuclear weapons are less vulnerable to cyber-threats than U.K. U.S. France, Russia, China and India. The Evan Braden Montgomery in his report "*Nuclear Terrorism Assessing the Threat, Developing a Response*" argues that Pakistan's leadership is not safer from assassination attempts. Musharaf faced multiple assassination attempts while Benazir Bhutto was killed by terrorists. It can be argued that security of an individual does not match with security of a nuclear arsenal. It would be naïve to draw a comparison between both.

Pakistan's Vivacious Response to NSS

After initiation of Obama's Nuclear Security Summit, Pakistan welcomed Obama's initiative and took several steps advancing towards more better standards of nuclear security. Pakistan set up "Pakistan's Centre of Excellence for Nuclear Security" in 2012 to offer education and training on nuclear security in collaboration with international networks.

The IAEA acknowledged that Pakistan's first line officers are in better position to curtail risk of trafficking in nuclear and other radioactive materials because of using advanced radiation detection and monitoring equipment. This is the major benefit that Pakistan reaped from the centre and also building its national capacity through technical and scientific support programs. Pakistan's Centre for Excellence also extends support to personnel involved in maintenance and up gradation of the nuclear facilities. Pakistan Nuclear Regulatory Authority Chairman Muhammad Anwar Habib claimed that with an integrated capacity building program in place, Pakistan

³⁶ "Cyber Threats to Nuclear Weapons: Should We Worry? A Conversation with dr. Andrew Futter," Nuclear Threat Initiative, January 25, 2017, <http://www.nti.org/analysis/atomic-pulse/cyber-threats-nuclear-weapons-should-we-worry-conversation-dr-andrew-futter/>.

can offer capacity building and training to other countries for physical protection of nuclear power plants and their security.

Abha Dixit in her research “Pakistan’s National Centre of Excellence contributes to sustaining nuclear security” highlights three institutes in Pakistan committed to aggrandize nuclear security. Pakistan’s measures to demonstrate its consolidated efforts include best practices through three affiliated institute in Pakistan,

- Pakistan Centre of Excellence for Nuclear Security (PCENS)
- Pakistan Institute of Engineering and Applied Sciences (PIEAS)
- National Institute of Safety and Security (NISAS).

Three of these institutes offer training in nuclear security. The PCENS particularly imparts training in nuclear security and response. The PIEAS being an institute conducts academic courses whereas NISAS conducts courses on providing comprehensive training for regulatory operations.³⁷

The IAEA Director General in March 2014 stated “It is very impressive that you organize the training in a very systemic and operational manner.”³⁸ Pakistan is also implementing Nuclear Security Action Plan (NSAP) in cooperation with IAEA to manage radioactive sources and prepare to handle any emergency situation.

The Strategic Plans Division (SPD) has a very credible procedure that runs strict reliability personnel program. It has launched intelligence to counter internal and external security threats, risk of proliferation, preventing fear of nuclear terrorism and any other related accidents. Pakistan’s nuclear program’s essential part is safeguarding these strategic assets from any danger whether from terrorists or from other inimical states.

The SPD is the secretariat of National Command Authority that reinforces nuclear security as well. Based on safety and security measures taken by Pakistan, it is also contributing to promote agenda for nuclear safety and security. In addition, Pakistan, being member of the IAEA security commissions, contributes to IAEA’s goal of promoting nuclear related safety. The International Atomic Energy Agency (IAEA) developed the Nuclear Security Support Centre (NSSC) aimed at strengthening sustainability of nuclear security in countries with following stated objectives

- I. Developing of human resource through specially designed training programs
- II. Establishing a network of experts

³⁷ Aabha Dixit, “Pakistan’s National Centre of Excellence Contributes to Sustaining Nuclear Security,” *IAEA Bulletin (Online)* 57, no. 4 (2016): 22, <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull57-4/5742222.pdf>.

³⁸ Najam Rafique, “Pakistan’s Role in Nuclear Security Summit,” *Institute of Strategic Studies* (March 25, 2016): 2, <http://issi.org.pk/wp-content/uploads/2016/05/Report-Roundtable-NSS-March-25.pdf>.

- III. Response to nuclear security events by offering technical support for equipment management.³⁹

Organizations and Institutions

Research laboratories under the control of Pakistan Atomic Energy Commission (PAEC) which played a pivotal role in development of Pakistan's nuclear program are responsible for research and development of nukes. Pakistan's nukes are heavily guarded under layered defence system, electronic sensors and counter-intelligence teams.⁴⁰

In 23rd meeting of the National Command Authority (NCA) held on 21 December, 2017 and chaired by Prime Minister Shahid Khaqan Abbasi, NCA was briefed on strategic environment. The NCA also took stock of regional security environment especially Indian acts to destabilize regional stability in South Asian region. The NCA reiterated to avoid any arms race with India but adherence to Pakistan's full spectrum deterrence in line with credible minimum nuclear deterrence.⁴¹ In that meeting nuclear scientists were congratulated upon new additions into defence capability of Pakistan. Most importantly, NCA took a detailed review of Nuclear Security Regime and expressed its confidence in command and control of nuclear weapons. The NCA also re-affirmed that Pakistan is a responsible nuclear state and would continue contributing towards security of nuclear weapons under IAEA domain.⁴²

Pakistan's nukes are guarded through multi-layered security that takes place via land, air and sea. Multilayered system detects any sort of radiation on places like borders, airport, and railways crossing to curb chances of proliferation. Cargos that pass through such passages can also be scanned through to prevent smuggling of nuclear technology and materials.

Islamic State of Iraq and Syria (ISIS) is a transnational terrorist group which has expanded its network from Iraq and Syria to Afghanistan and Pakistan. According to an assessment of National Nuclear Security Administration (NNSA), this group is vying to acquire nuclear technology through sympathetic operatives who may belong to organizations dealing with nuclear weapons. Though Pakistan's nuclear security has increased substantially but this group is active through its skillful operatives in cyber-crime. Barack Obama speaking on 2016 Nuclear Security at Washington D.C. warned of ISIS' lethality and David Cameron (former U.K PM) offered

³⁹ Aabha Dixit, "Pakistan's National Centre of Excellence Contributes to Sustaining Nuclear Security

⁴⁰ Naeem Salik, Kenneth N. Luongo, "Challenges for Pakistan's Nuclear Security," Arms Control, January 14, 2018, https://www.armscontrol.org/act/2013_03/Challenges-for-Pakistan-Nuclear-Security.

⁴¹ ISPR, "Press Release, "inter Services Public Relations," ISPR, accessed August 01, 2018, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=4459#pr_link4459.

⁴² Ibid.

British help to other countries to ensure that terrorists could not get hold of radioactive materials.⁴³ Regional states have started cooperation in curbing any chances of nuclear smuggling leading to nuclear terrorism. Constant cooperation of member states with (NNSA) and Nuclear Smuggling Detection and Deterrence (NSDD) is indispensable to increase security of nuclear technology and related materials.

Augmenting Nuclear Security through Training Programs

Pakistan is making unrelenting efforts to secure nuclear weapons globally as it ratified Convention on the Physical Protection of Nuclear Material (CPPNM) in 2016 and also established Centre of Excellence (COE) on nuclear security by cooperating with IAEA. It also did host the annual meeting of International Network of Nuclear Support Centers as a proactive member of international community to dope up global challenge of nuclear security. Other steps include up-gradation of security measure of medical center's nuclear security system, nuclear power plant and civilian nuclear power plants to add to better security practices. Among other practices of securing nukes, Pakistan also established nuclear emergency management system to prevent smuggling of radiological materials, India also took several steps to increase its nuclear security because India and Pakistan are contenders for Nuclear Suppliers Group (NSG). Both the countries are non-signatory of Nuclear non-Proliferation Treaty (NPT) and Comprehensive Test Ban Treaty (CTBT), the criteria for entrance into NSG is that a country with better track record of non-proliferation and support of NSG members has brighter chances of getting entry into exclusive group. India also established national counter smuggling team to prevent the threats of nuclear materials smuggling through sea and air routes.⁴⁴

Pakistan Nuclear Regulatory Authority (PNRA) is the competent and independent body for the regulation of nuclear safety, physical protection, and radiation protection. It also deals with transportation and waste safety of nuclear materials. The PNRA established a modern and well equipped school for radiation and nuclear safety. To respond to any radiation accidents or nuclear emergency it offers courses, tabletop exercises and workshops to train the personnel. Pakistan's Strategic Export Control Division in ministry of foreign affairs has revised export control list by

⁴³ Charlie Cooper, *Isis Nuclear Bomb Is a Serious Threat, warns Barack Obama*, *Independent*, April 01, 2016, <http://www.independent.co.uk/news/world/politics/isis-nuclear-bomb-is-a-serious-threat-warns-barack-obama-a6964621.html>.

⁴⁴ "Nuclear Security Summit 2016 –highlights from the National Progress Report," The White House Archives, accessed January 09, 2018, <https://obamawhitehouse.archives.gov/the-press-office/2016/04/04/nuclear-security-summit-2016-highlights-national-progress-reports>.

consulting concerned departments. Its ultimate objective is to improve the implementation of Export Control on Goods, materials, technologies and equipment related to nuclear and biological weapons and their delivery system under the control of Delivery System Act (Strategic Export Control Act - 2004). The Act of revising list of Export Controls is up to following organizations i.e. European Union, Nuclear Suppliers Group, Missile Technology Control Regime and Australia Group. These steps are highlighting Pakistan's stringent measures at international forums which would benefit Pakistan's entry into NSG and also improve Pakistan's image as a responsible nuclear state.

United Nations Security Council Resolution 1540 (2004) holds that all of the states in international community shall refrain from sharing any sort of technology to non-state actors particularly terrorist groups, which may help them manufacturing any biological, chemical or nuclear weapons. This resolution requires all member states of the United Nations to take appropriate measures to prevent proliferation of nuclear weapons and their delivery system.⁴⁵ Pakistan is already complying with UNSCR 1540 by submitting reports to a committee that it has taken ample measures on radiological security and control of sensitive information and materials particularly WMDs.⁴⁶

Development on Counter Radiological and Nuclear Smuggling

Based on Pakistan's practices of nuclear safety and security, the IAEA acknowledged that no single incident of nuclear trafficking has been reported whereas European nations are technologically advanced but some of the incidents of illegal trafficking have been reported there. According to an annual report published by James Martin *Centre for Nonproliferation Studies*, there have been 325 reported incidents across 38 countries, in which nuclear material was either lost or outside regulatory control. Weapon-usable material was identified only in a single incident with less than a gram of highly enriched Uranium. Overall, only 5 % of the cases involved high risk radioactive materials.⁴⁷

Another report on nuclear trafficking revealed that about 827 incidents of nuclear trafficking occurred between 1993 and 2005 but Pakistan was not involved in any of those incidents. Pakistan is set to meet international standards on regulating nuclear materials.⁴⁸ Pakistan's

⁴⁵ "UN Security Council Resolution 1540(2004)",

⁴⁶ "Press Information Department," Press Information Department, accessed June 10, 2018, <http://www.pid.gov.pk/?p=3053>.

⁴⁷ "Annual Report-2014, CNS Global Incident and Trafficking Database," *Nuclear Threat Initiative*, Accessed January 5, 2018, http://www.nti.org/media/documents/global_incidents_and_trafficking_2014.pdf

⁴⁸ Pakistan Not On Iaea N-Trafficking Database, *DAWN*, September 08,2006, <https://www.dawn.com/news/209490>

multifaceted strategy to aggrandize nuclear safety and security incorporated improvement of national control structure for the advancement of physical protection of nuclear power plants in Karachi.

Improving Radiological and Nuclear Security

There is an extensive use of radioactive material in medical sciences and Pakistan upgraded its radioactive sources in collaboration with IAEA. In line with that Pakistan established more than dozen medical centers across the country. Now Pakistan voluntarily is willing to share its expertise with other nations about power generation and research for civil purposes under the supervision of IAEA.

India is watchful of its strategic interest concerning security of nuclear weapons. Indian parliament was attacked in December, 2001; Mumbai's hotel Taj Mahal came under terrorist attack in 2008, Uri and Pathankot attacks 2016 are the incidents that reflect Indian nuclear arsenals may also come under possible terrorist attacks. Despite the risk of nuclear terrorism in India, United States agreed to offer civil nuclear deal to India (Indo-US Nuclear deal 2005). Under the Indo-US civil nuclear deal, India agreed to separate its civil nuclear from military nuclear facilities. India also opened civil nuclear facilities for inspection of the IAEA and placed all civil nuclear facilities under IAEA safeguards. In exchange for this reform, the United States agreed to extend fullest civil nuclear cooperation to India.

But India is keener to get entry into Nuclear Suppliers Group (NSG). United States supports Indian campaign for NSG membership. Pakistan faces fierce opposition from India and United States to get NSG membership. Some senators in congress of the United States raise concerns about Pakistan's membership of NSG. A worst possible scenario would be when India gets entry and Pakistan is stalled, it will exacerbate regional stability. China through shrewd diplomatic ventures tries to maintain strategic balance between India and Pakistan.

That single deal turned India from energy deficient country to energy surplus country. India has not taken even extraordinary steps to ensure nuclear safety but to favor India; U.S. put international norms on backburner and clinched a deal with India. Being non-signatory of NPT and CTBT India may not be offered any civil nuclear deal that is in direct contravention to IAEA statutes.

Major concern of both South Asian nuclear neighbors is that NPT is discriminatory. Though Pakistan is not a signatory of NPT but it has established stringent control on export control to demonstrate a character of responsible nuclear actor. Belfer Centre and Arms Control released a report in March, 2016 about Pakistan authenticating Pakistan's foolproof security

measures of its nuclear arsenals even better in standards than neighboring India.⁴⁹

Risk of External Threats to Nuclear Security

Some of the issues concerning Indo-Pakistan nuclear clash may not be properly dealt with under the NSS. Such issues need to be resolved through political leadership of both nations and should avoid any confrontational posture. Indian army Chief Gen. Bipinn Rawat made a strong statement about Pakistan that “We will call the (nuclear) bluff of Pakistan. If we will have to really confront the Pakistan, and a task is given to us, we are not going to say we cannot cross the border because they have nuclear weapons.”⁵⁰ Indian Air Force commander, Air Chief Marshal Birender Singh Dhanoa also made a similar statement that Indian Air Force (IAF) has the capability for locating and destroying Pakistan’s nuclear arsenal. “As far as IAF is concerned, it has the ability to locate, fix and strike and that is not only for tactical nuclear weapons but also for other targets across the border”.⁵¹

Former U.S. Senator Larry Pressler went much forward than India to suggest a joint Indo-US preemptive strike to destroy Pakistan’s nuclear sites. While talking to *Times of India* he termed Donald Trump as the best president of the United States who put Pakistan on a notice for harboring terrorists’ networks on its soil.⁵² Larry Has a history of anti-Pakistan struggle as he has been senator in three terms and twice as member of House of Representative. He introduced Pressler Amendment in 1990 to block U.S. military aid to Pakistan because of the development of Pakistan’s Nuclear weapons. He also was behind barring delivery of 30 F-16 fighter jets to Pakistan and regarded as hero in India.

To catch the attention of International media, India lodged extensive propaganda campaign against Pakistan’s nuclear arsenal, as terrorist targeted Kamra Aeronautical Complex 45 miles away from capital city Islamabad .Even the credible news paper *The Telegraph*, reported with the caption that

⁴⁹ Hassan Abbas, Deciphering the Attack On Pakistan Army’s Headquarters, *Foreign Policy*, October 11,2009, <http://foreignpolicy.com/2009/10/11/deciphering-the-attack-on-pakistans-army-headquarters/>.

⁵⁰ “Ready to Call Pakistan’s Nuclear Bluff,” *DNA India*, January 12, 2018, <http://www.dnaindia.com/india/report-ready-to-call-pakistan-s-nuclear-bluff-if-needed-army-chief-rawat-2575021>

⁵¹ Naveed Ahmad, “Can India Destroy Pakistan’s Nuclear Arsenal?” *The Express Tribune*, October 12,2017 <https://tribune.com.pk/story/1529367/can-india-destroy-pakistans-nuclear-arsenal/>

⁵² Vaibhav Purandarel, India-U.S Should Go for Preemptive Strike, Destroy Pakistan’s Nuclear Assets, *Times of India*, September 26,2017, <https://timesofindia.indiatimes.com/india/india-us-should-go-for-pre-emptive-strikes-destroy-paks-n-assets-ex-us-senator/articleshow/60834852.cms>.

“*Militants attack Pakistan Nuclear Air base*”.⁵³ Whereas Pakistan Air Force officials claimed that the Kamra attack was aimed at destroying American fighters plane used for bombing Taliban militants in restive tribal areas of Pakistan.⁵⁴

India and the United States raised serious concerns that terrorists may get control of Pakistan’s nuclear weapons in such attacks against Pakistan’s nuclear arsenal, whereas all such claims of India and United States were mere a propaganda. Pakistan’s nuclear installations are heavily guarded which are invincible to such terrorist attacks. Pakistan’s nuclear establishment has designed flawless management to deal with internal and external security risks to nuclear assets.

The Nuclear Security Summit 2014 was held at The Hague on March 24-25, 2014. Fifty eight world leaders gathered there to continue efforts for securing nuclear weapons across globe. Chinese President Xi Jin Ping and U.S. President Barack Obama also attended the Summit which reflected seriousness of the U.S. and China to avert risk of proliferation and safety and security of nuclear weapons. The NSS 2014 was basically reiteration of world leaders to enhance cooperation on nuclear security and assessing standards of global nuclear security. Once again all the participating states reiterated adhering to reduce dangerous materials especially Highly Enriched Uranium (HEU) and plutonium. Among the other top agenda of NSS 2014 was to increase international cooperation on preventing nuclear terrorism and securing all radioactive materials.

The concept of ‘gift basket’ was more encouraging for participants to take special measures to contribute towards international cause of peace and security. Gift basket meant extra initiatives of states to present themselves as role models for other states. The Netherland developed gift basket by improving expertise regarding nuclear forensics with the help of the Netherland Forensic Institute (NFI). But unfortunately these talks were overshadowed by Ukrainian crisis, also Iran and North Korea were absentees of the NSS 2014. Pakistan’s National Statement of NSS 2016 reiterated strong commitment to objective of nuclear security through its sustained efforts. Pakistan’s the then Foreign Secretary Aizaz Cahudhary stated that Pakistan has been proactively engaged with international community to promote nuclear safety and security. Mr. Aizaz at *International Conference on Nuclear Security: Commitments and Actions* held at Vienna on December 5-9, 2016 clarified that Pakistan’s export control regime is at par with the standards maintained by Nuclear Suppliers Group, Missile Technology Regime and the Australia Group. He also urged to remove barriers for

⁵³ Dean Nelson , Tom Hussain, Militants Attack Pakistan’s Nuclear Air Base, *The Telegraph*, August 16, 2012, <http://www.telegraph.co.uk/news/worldnews/asia/pakistan/9479041/Militants-attack-Pakistan-nuclear-air-base.html>

⁵⁴ Ibid

equitable and nondiscriminatory access to civil nuclear cooperation that ensures to safe and responsible nuclear trade among member states for peaceful purposes. Pakistan's nuclear program has achieved higher standards of security equivalent to great powers and all those unfounded fears of critiques stand invalid.

Conclusion

Nuclear safety and security are the gigantic challenges that need attention of international community. Without the cooperation of all nuclear actors particularly Pakistan such efforts to secure nuclear weapons are in vain. Some terrorist groups tried to acquire nuclear technology through smuggling and black market but such efforts were curbed through intelligence based operations and efforts of International Atomic Energy Agency. Pakistan's nuclear assets are much safer than India as claimed by Harvard University Report, despite that Pakistan is making unrelenting efforts to contribute much to reach at a level where international propaganda against Pakistan's nuclear assets may not undermine its repute globally. Pakistan government needs to extensively launch diplomacy on dispelling misapprehensions about Pakistan's nuclear arsenal. It should also underline training programs and educations courses designed for nuclear safety and security. Pakistan's export control regime is at par with the standards of NSG. The United States may not adopt discriminatory policy in awarding NSG membership to India whereas Pakistan has contributed more than the latter. Given Pakistan's multi-layered security system, it is unlikely that terrorists may attack Pakistan's nukes or acquire some technology for making crude-nuclear weapon. Pakistan's strategic assets are hard to target by India and the United States. Nuclear Security Summit ended with conclusion of NSS 2016, but International Atomic Energy Agency may continue that manifestation by organizing similar conferences on annual basis. Such an inclusive approach may end risk of nuclear terrorism by providing safety and security to nuclear weapons.