

## Pakistan's Nuclear Security Regime: Overcoming the Gap between Domestic Nuclear Governance and International Perception

Shahneela Tariq<sup>1</sup>

### Abstract

*Nuclear security has always remained a prime concern of international community which has now increasingly been worried about the threat of nuclear terrorism. Pakistan has always been attentive to this threat and has ensured nuclear safety and security of its nuclear program and facilities. Pakistan's enduring commitment towards nuclear security can be assessed through its international ranking and participation in international nuclear security arrangements including the Nuclear Security Summits. All civilian nuclear facilities in Pakistan are under the IAEA safeguards. Yet there is a wide gap between the true understanding of Pakistan's domestic nuclear governance and international perception. This research analyses the fundamentals of contemporary international nuclear security regulations in an attempt to examine the efforts made by Pakistan in building a comprehensive system of nuclear security in compliance with International Nuclear Law.*

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<sup>1</sup> Ms. Shahneela Tariq is a Lecturer at the School of Integrated Social Sciences (SISS), University of Lahore (UoL), Lahore.

**Key Words:** Nuclear Security, International Nuclear Law, Pakistan's relations with IAEA, Nuclear Security Regulations

## Introduction

Cooperation and collaboration at the global level are the growing trends among states in the 21<sup>st</sup> century but their security and survival remains to be a prime concern. Driven by this concern, the national security is often aimed at maximization of power to protect the national borders against the unavoidable war. The states are often engaged in balancing the threat through various means. The need to acquire nuclear weapons is often the outcome of the efforts to 'balance the threat.'

The emergence of 'nuclear terrorism' as a new security threat after the incidents of 11 September 2001, demanded increased global attention towards nuclear security. The world was introduced to a unique entity that was not under obligation to abide by any national or international jurisdiction. The phenomenon of terrorism is highly complex that has increased the international obligations on all sovereign states in possession of nuclear technology and material to ensure nuclear security and compliance with the international commitments through the implementation of nuclear security regulations and laws.

The General Conference resolutions of IAEA have put the responsibility of security of nuclear materials and technology entirely on the nation states as it is directly linked with the national security.<sup>2</sup> Pakistan as one of the nine nuclear weapons state deals widely with

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<sup>2</sup> International Atomic Energy Agency, "IAEA Annual report 2017," IAEA, 2018, Available at: <https://www.iaea.org/sites/default/files/publications/reports/2017/gc62-3.pdf> (accessed on 28 April 2020).

the IAEA for the management and maintenance of its nuclear power program. There are five nuclear power plants, which are operational in Pakistan, while two under construction plants are expected to be completed by 2030.<sup>3</sup> All civilian nuclear facilities, material and technology in Pakistan is under the safeguards of IAEA. Pakistan has also signed tripartite agreements with the IAEA for the transfer of nuclear technology from other countries. However, significant literature has been produced questioning the security of Pakistan's nuclear program and the inability of country's security measures to keep its nukes secure.

These concerns are mainly based on insider-outsider threat phenomenon, wherein the nuclear facilities have been perceived to be exposed to the possibility of terrorist attacks or theft by the outsiders with insiders help. These concerns have mainly developed due to prevailing socio-political instability in Pakistan. Moreover, the Abdul Qadeer Khan's episode became the baseline for foreign authors to ignore the overall efforts done by Pakistan till date. As mentioned by Naeem Salik that "any systematic flaw was corrected right after Pakistan's first nuclear test in 1998 with the establishment of National Command Authority (NCA) and Strategic Plans Division (SPD) in 1999."<sup>4</sup>

However, the concerns over Pakistan's ability to safeguard its nuclear program reignited with Mehran Naval base attack in 2011 and Karachi Naval base attack in 2014, which caused alarm among the foreign experts and scholars about Pakistan's security measures. The

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<sup>3</sup> "Statement by Pakistan Delegation, 61<sup>st</sup> Annual General Conference of IAEA," *International Atomic Energy Agency*, 18 September 2017, Available at: <https://www.iaea.org/sites/default/files/gc61-pakistan-statement.pdf> (accessed on 5 May, 2020).

<sup>4</sup> Kenneth, N Luongo and Naeem Salik, "Building Confidence in Pakistan's Nuclear Security," *Arms Control Association*, April 30, 2007, Available at: <https://www.armscontrol.org/act/2007-12/features/building-confidence-pakistan%E2%80%99s-nuclear-security> (accessed on 5 May 2020).

report published by Harvard Kennedy School - Belfer Center for Science and International Affairs, discusses that “stockpiling of nuclear weapons, nuclear material and tactical nuclear weapons introduced by Pakistan has increased the dangers. The emerging technologies have enhanced the possibilities of nuclear theft by an entity who wishes to steal nuclear material or technology for harmful purposes.”<sup>5</sup> Furthermore, Pakistan has been criticized for not being a part of INFCIRC/869, while India has been a part of it, which mainly deals with the periodic review of domestic legislative framework on nuclear security.<sup>6</sup>

The fears of international community however, no matter how legitimate, are essentially unfounded when it comes to Pakistan. It is dominated by false western narrative which needs to be dismissed to clear the ‘fog of rumours’ as mentioned by Gen. Khalid A. Kidwai.<sup>7</sup> Nuclear Security Index of the year 2020 by Nuclear Threat Initiative (NTI) also highlights that Pakistan is the most improved nation in theft ranking with weapons-usable nuclear materials by 7 points increase in an overall score of 13 in the year 2016.<sup>8</sup> This improved ranking has been based on the effective measures taken in Security and Control domains, nuclear safety and security regulations, and compliance with Global Norms by subscribing to nuclear security INFCIRC/869.

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<sup>5</sup> Methew Bunn, Nickolas Roth and William H. Tobey, “Revitalizing Nuclear Security in an Era of Uncertainty,” *Belfer Centre Harvard Kennedy School*, Report-2019, Available at: [https://www.belfercenter.org/sites/default/files/2019-03/RevitalizingNuclearSecurity\\_Mar19.pdf](https://www.belfercenter.org/sites/default/files/2019-03/RevitalizingNuclearSecurity_Mar19.pdf) (accessed on 2 May 2020).

<sup>6</sup> Ibid.

<sup>7</sup> Malik Qasim Mustafa, “Report- Roundtable Pakistan’s Role in Nuclear Security Summit Process,” *Institute of Strategic Studies*, 2016, Available at: <http://issi.org.pk/wp-content/uploads/2016/05/Report-Roundtable-NSS-March-25.pdf> (accessed on 2 May 2020).

<sup>8</sup> “Australia Ranks 1<sup>st</sup>, Pakistan is Most Improved Country,” *NTI Nuclear Security Index*, 2020, Available at: <https://www.ntiindex.org/news/australia-ranks-1st-pakistan-is-most-improved/> (accessed on May 5 2020).

Western discourse on Pakistan’s nuclear security is mostly based on assumptions as opposed to the real facts. The country is putting in place robust nuclear security mechanisms, consisting of regulations, human resource, and infrastructure for more than two decades now that has also been acknowledged and appreciated by the IAEA officials.<sup>9</sup> Therefore, a need has been felt to keep the focus of this paper mainly on how to overcome the gap between domestic nuclear governance and international perception. The effort has also been made to highlight Pakistan’s compliance, good practices, nuclear credentials, and effective safety and security measures in line with the international nuclear law. Furthermore, this paper recommends steps to reduce the disconnect between nuclear security community and academic writers in Pakistan to build and extensively disseminate a fact-based nuclear security discourse.

### **Nuclear Security under International Nuclear Law**

The law dealing with the benefits and risks of nuclear technology is called Nuclear Law. Whereas the legal framework dealing with the states and international organizations is categorized as International Nuclear Law. It consists of ‘international regulations of nuclear safety and security; resolutions adopted by concerned international legal bodies; bilateral & multilateral agreements; and export control regime.’<sup>10</sup> Nuclear security is one of the most important components of the international nuclear law, which is based on the non-proliferation agenda. According to the definition presented by the IAEA, nuclear security can be described as the: “prevention and

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<sup>9</sup> IAEA Director General in Pakistan: Nuclear Power and SDGs Highlighted,” *International Atomic Energy Agency*, Available at: <https://www.iaea.org/newscenter/news/iaea-director-general-in-pakistan-nuclear-power-and-sdgs-highlighted> (accessed on May 5, 2020).

<sup>10</sup> Noreen Iftikhar, “International Nuclear Law: A Case Study of Pakistan,” *Strategic Studies*, Vol. 38, no.4 (2018), 71.

detection of and response to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities.”<sup>11</sup>

### **Pakistan’s Quest for its Security and Survival**

Pakistan has always believed in peaceful relations with all nations, the Founding father of Pakistan, Muhammad Ali Jinnah said in 1948:

Our foreign policy is one of friendliness and goodwill towards all the nations of the world. We do not cherish aggressive designs against any country or nation. We believe in the principle of honesty and fair play in national and international dealings and are prepared to make our utmost contribution to the promotion of peace and prosperity among the nations of the world. Pakistan will never be found lacking in extending its material and moral support to the oppressed and suppressed peoples of the world, and in upholding the principles of the United Nations Charter.<sup>12</sup>

Constitution of Pakistan also stresses on the peaceful co-existence with other states as stated in the article 40 of the Constitution that:

The state shall endeavour to preserve and strengthen fraternal relations among Muslim countries based on Islamic unity, support the common interests of the

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<sup>11</sup> International Atomic Energy Agency, “Nuclear Security Series Glossary, Version 1.3,” IAEA, 2015, Available at: <https://www-ns.iaea.org/downloads/security/nuclear-security-series-glossary-v1-3.pdf> (accessed on 20 May 2020).

<sup>12</sup> “Guiding Principles and Objectives of Ministry of Foreign Affairs,” *Ministry of Foreign Affairs Government of Pakistan*, Available at: <http://mofa.gov.pk/guiding-principles-and-objectives/> (accessed on 20 May 2020).

peoples of Asia, Africa, and Latin America, promote international peace and security, foster goodwill and friendly relations among all nations and encourage the settlement of international disputes by peaceful means.<sup>13</sup>

Pakistan was a strong proponent of South Asian region to be made into a nuclear weapon free zone and wanted to establish a peaceful nuclear power program under the Atom for Peace Agreement in 1950s. The country further strengthened its commitment by joining the IAEA as a founding member in 1957. Since then, Pakistan has worked extensively with IAEA to enhance her energy production and entered into several agreements with IAEA on nuclear safety and security.

Two major events changed the strategic perception of Pakistan as the major powers were not fully able to provide security umbrella to Pakistan to protect its national security against India. These events were (1) Separation of East Pakistan and emergence of Bangladesh in 1971, and (2) Indian nuclear test in 1974, which resulted into the creation of Nuclear Suppliers Group to control and limit the nuclear exports. It was alarming for Pakistan to see that these events did not really affect the US relations with India. Instead, it caused hurdles for Pakistan's ambitions to acquire civilian nuclear technology for economic development and peaceful purposes. These events changed the strategic culture of South Asia from cooperation to competition, pushed Pakistan to face a nuclear armed adversary and so began Pakistan's quest for its security and survival.<sup>14</sup>

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<sup>13</sup> National Assembly of Pakistan, "The Constitution of The Islamic Republic of Pakistan," *National Assembly of Pakistan, 2018*, Available at: [http://www.na.gov.pk/uploads/documents/1549886415\\_632.pdf](http://www.na.gov.pk/uploads/documents/1549886415_632.pdf) (accessed on 22 May 2021).

<sup>14</sup> Rabia Akhtar, *The Blind Eye: U.S. Non-Proliferation Policy Towards Pakistan from Ford to Clinton* (Lahore: The University of Lahore Press, 2018), 327.

However, after becoming a nuclear state in 1998, Pakistan presented the idea of 'Strategic Restrained Regime,'<sup>15</sup> based on ensuring a nuclear restraint between India and Pakistan and resolution of all outstanding disputes between the two countries. This offer was reiterated in 2006 by then Pakistan Prime Minister Shaukat Aziz at the Heritage Foundation event and again in 2016, during the 22<sup>nd</sup> meeting of National Command Authority (NCA). The work is still in process but these efforts from Pakistan stand testimony to its willingness to contribute to global peace and stability.

The global perception about Pakistan is based on biased and flawed western literature that considers Pakistan a great potential threat to global peace, as highlighted by Stephen J. Cimbala that "Pakistan has the tendency for nuclear proliferation as it was done by high official in AQ Khan's episode. Furthermore, terrorist attacks on Pakistan naval bases can be taken as indication of possible nuclear theft."<sup>16</sup> However, the facts and assessment of Pakistan's nuclear security efforts are often borrowed from other western authors whose works have been based on previous unrelated events. They do not in any way reflect the reality that has been appreciated by world leaders and international organizations. As mentioned by President Obama that "we have confidence in their (Pakistan's) security procedures and elements and believe that the security of those sites is adequate."<sup>17</sup> Similar views have been shared by Director of National Intelligence James R. Clapper

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<sup>15</sup> M. Khan, Ahmed Khan and Syed T. Hyder, "Strategic Restraint Regime in South Asia," *Margalla Papers* Vol. XXII (2018), 83.

<sup>16</sup> Stephen J. Cimbala, *Getting Nuclear Weapons Right* (USA: Lynne Rienner Publishers. Inc. 2018), 23.

<sup>17</sup> "Interview with General David Petraeus," *Real Clear Politics*, May 10, 2009,

Available at:

[https://www.realclearpolitics.com/articles/2010/08/15/interview\\_with\\_general\\_david\\_petraeus\\_106766.html](https://www.realclearpolitics.com/articles/2010/08/15/interview_with_general_david_petraeus_106766.html) (accessed on 22 May 2021).



Jr. during congressional testimony that “I am reasonably confident about Pakistan’s appropriate safeguards for its nuclear program.”<sup>18</sup>

Gen. Kidwai in his speech mentioned that “Pakistan’s nuclear security regime deals with full spectrum of insider-outsider nuclear threats.”<sup>19</sup> This has been reiterated by the report prepared by Pakistan’s Foreign Ministry for the Nuclear Security Conference 2020 by IAEA.<sup>20</sup>

### **Domestic Nuclear Security Regime of Pakistan**

The issue of ‘nuclear security’ has been extensively addressed by the IAEA. It characterizes nuclear security culture as: the assembly of characteristics, attitudes, and behaviour of individuals, organizations and institutions which serves as a means to support and enhance nuclear security.

Nuclear security regime requires a well-established legislative framework & regulations for the administration of nuclear technology and material. It further requires an integrated system of institutions and nuclear security measures that include intelligence, prevention, detection, and response systems. Notably, the human element cannot be eliminated from nuclear security debate. It is essential to have leadership and employees, who are loyal to the national security of the state, working in the security business.

Pakistan’s domestic nuclear security regime is an extensive network of: (1) legislative framework, consisting of regulations and administrative

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<sup>18</sup> Greg Miller, Craig W, and Barton G., “Top-secret U.S. intelligence files show new levels of distrust of Pakistan,” *The Washington Post*, September 2, 2013.

<sup>19</sup> International Atomic Energy Agency, “Nuclear Security Culture, Implementing Guide,” IAEA, 2008, Available at: [https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1347\\_web.pdf](https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1347_web.pdf) (accessed on 27 May 2020).

<sup>20</sup> Ministry of Foreign Affairs, “Pakistan’s Nuclear Security Regime 2020,” MOFA, 2020, Available at: <http://mofa.gov.pk/wp-content/uploads/2020/02/NSRFinal08-02-2020.pdf> (accessed on 27 May 2020).

measures, (2) institutions and strategic national organizations, for the implementation of legislative framework, and (3) international cooperation to incorporate international best practices into the national legislation. Pakistan's nuclear security regime is regularly assessed and revised to meet international standards.<sup>21</sup>

### i. Legislative and Regulatory dimension of Nuclear Security

Pakistan's legislative and regulatory system covers physical and radiological security and consists of following four major regulatory systems:

- **Pakistan Atomic Energy Commission Ordinance (1965):** Pakistan Atomic Energy Commission Ordinance 1965 established Atomic Energy Commission in Pakistan for the promotion of peaceful uses of nuclear energy in Pakistan and also to ensure compliance with international commitments.<sup>22</sup>
- **Pakistan Nuclear Regulatory Ordinance (2001):** Promulgation of this ordinance mainly established Pakistan Nuclear Regulatory Authority for regulation of nuclear safety and radiological protection. PNRA also became the authority to ensure safe and secure nuclear installations in Pakistan.<sup>23</sup>

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<sup>21</sup> Ministry of Law and Parliamentary Affairs, "The Pakistan Atomic Energy Commission Ordinance, 1965," IAEA, 1965, Available at: <https://inis.iaea.org/collection/NCLCollectionStore/Public/21/072/21072764.pdf> (accessed on 4 April 2020).

<sup>22</sup> Ministry of Law, Justice, Human Rights and Parliamentary Affairs, "Ordinance No.III of 2001," PNRA, 2001, Available at: [https://www.pnra.org/upload/legal\\_basis/Ordinance%202001\(Amennded\).pdf](https://www.pnra.org/upload/legal_basis/Ordinance%202001(Amennded).pdf) (accessed on 4 April 2020).

<sup>23</sup> "The Pakistan Atomic Energy Commission Ordinance, 1965," *International Atomic Energy Agency*, May 29, 1965, Available at: <https://inis.iaea.org/collection/NCLCollectionStore/Public/21/072/21072764.pdf> (accessed on 16 April 2021).

- **Export Control Act (2004):** This Act was passed under Strategic Export Control Division (SECDIV) of the Ministry of Foreign Affairs that has been revised in 2011 and 2015. This Act aims to control nuclear related good, technology and material. Export Control Act of 2004 is in line with Nuclear Suppliers Group control list.<sup>24</sup>
- **National Command Authority Act (2010):** This NCA Act of 2010 has complete powers over the nuclear program including nuclear sites, material, technology, export controls and personnel working in the sensitive nuclear areas. It also deals with the research and development programs in nuclear and space technologies.<sup>25</sup>

These measures provide legal independence to their respective authorities to maintain and manage state’s nuclear architecture. This regulatory framework has tailored measures to cover the security of nuclear and radioactive material (Physical protection and safety during the transportation of radioactive material), enforcement mechanisms and import-export laws in line with the international requirements.

## **ii. Institutional dimension of Nuclear Security**

Pakistan has a well-established network of institutions and strategic organizations to ensure the execution of legislative and regulatory framework. This network is a comprehensive set of effective Command and Control System under ‘National Command Authority (NCA),’ which is the decision-making body on all nuclear related matters. A rigorous nuclear safety system lies under Pakistan Nuclear Regulatory Authority. ‘Strategic Export Control Division’ under the Ministry of Foreign Affairs,

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<sup>24</sup> Strategic Export Control Division, “Act No. V of 2004,” *Senate Secretariate*, 2004, Available at: <http://www.secdiv.gov.pk/uploads/Doc-1%20Export%20Control%20Act-2004-0c0c.pdf> (accessed on 10 April 2020).

<sup>25</sup> Senate Secretariat, “The Gazette of Pakistan,” *NTI*, 2010, Available at: [https://media.nti.org/pdfs/1\\_20.pdf](https://media.nti.org/pdfs/1_20.pdf) (accessed on 10 April 2020).

was established to further strengthen the security of nuclear material and technology. To effectively run the security business PINSTECH is a leading institute that conducts research and is actively collaborating with IAEA on joint research projects. Furthermore, 'Pakistan Centre of Excellence on Nuclear Security (PCENS)' is a state of art training institute, which is providing a comprehensive space to national and international scientists and engineers to get training on nuclear safety and security.

- **National Command Authority (NCA):** National Command Authority has complete authority on nuclear program under the Federal Government of Pakistan, chaired by Prime Minister. In 2007 National Command Authority Ordinance was promulgated in the national legislation to take safety and security measures. It was re-issued in 2009 and 2010 and was adopted by the Parliament as National Command Authority Act 2010.<sup>26</sup> National Command Authority is a classic example of civil-military relationship for nuclear security. It consists of two divisions: 1) Employment Control Committee (ECC), which is a political-military body, responsible for nuclear policy including employment of strategic forces and deployment of nuclear use. 2) Development Control Committee (DCC), a military-techno body, deals with technical, financial, and administrative tasks of the nuclear program.
- **Strategic Plans Division (SPD):** It was established to bring all nuclear related methods under one umbrella and to avoid any unwanted event, which could put a question mark on Pakistan's nuclear security. SPD was established in 1999 as the secretariat of NCA and deals with all nuclear related aspects including,

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<sup>26</sup> Naeem Salik, *Nuclear Pakistan; Seeking Security & Stability* (Islamabad: University of Lahore: Printing Press, 2018), 94.

policy making, arms control, command and control, safety and security and research and trainings. SPD is the key to Pakistan’s nuclear management that follow a multi-layered security system to respond to the full spectrum of insider–outsider threats.<sup>27</sup> Furthermore, there is a special and broad mechanism to monitor the employees through an internal intelligence mechanism under section 7 of NCA Act.

It was essential to have a body to secure nuclear arsenals from inside threats and to change the mind-set of the individuals and organizations that were working in the nuclear related areas. Personal reliability program (PRP) was initiated by the SPD and Security clearance and screening of the people hired in the nuclear safety and security department was made necessary.<sup>28</sup> An integrated intelligence network was formed to check inside-out threats and to decrease the risk of nuclear theft and sabotage. The SPD security division under the command of a two-star general, reportedly has 25,000 personnel that includes 1,000 personnel in the Special Response Force in the event of an attack on nuclear facilities. The strength was previously estimated to be 20,000.

- **Pakistan Nuclear Regulatory Authority (PNRA):** To ensure nuclear safety of Pakistan’s nuclear program, ‘Pakistan Nuclear Regulatory Authority Ordinance 2001’ was approved as a crucial step to strengthen nuclear security architecture. PNRA is a competent and fairly independent institute that is responsible

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<sup>27</sup> Feroz Khan, *Eating Grass: The Making of the Pakistani Bomb* (California: Stanford Security Studies, 2012), 45.

<sup>28</sup> “Ministry of Foreign Affairs, “Pakistan’s Nuclear Security Regime,” *MOFA*, 2020, Available at: <http://mofa.gov.pk/wp-content/uploads/2020/02/NSRFinal08-02-2020.pdf> (accessed on 25 June 2020).

for nuclear safety and security in Pakistan. PNRA mainly acts as the planning, development and execution authority of policies related to nuclear and radiation safety.

Henceforth, PNRA is the regulatory body that issues a license to PAEC to set up a nuclear power plant and start a nuclear energy project under the safety measure of IAEA. Furthermore, PNRA ensures compliance with the terms and conditions of the license through a stringent oversight mechanism and provide assistance in case of emergency and accident. In this regard PNRA has established extensive regulations on safety of nuclear sites, population, and the environment. The 'IAEA Code of Conduct on Safety and Security of Radioactive Sources',<sup>29</sup> has been used as a guideline for regulating safety and security of radioactive sources in Pakistan. Notably this is a voluntary action of Pakistan to meet the international standards as a responsible nuclear state.

Most recently in April 2019, PNRA promulgated "Regulations on Physical Protection of Nuclear Material and Nuclear Installations" in its nuclear legislation. This regulation is a complete set of safety and security mechanism that meets the international standards of nuclear safety and security. National Institute of Safety and Security (NISAS) is a training institute under PNRA that offers technical trainings on nuclear safety and radiation safety, which was inaugurated by the IAEA Director General during his visit to Pakistan in 2014.<sup>30</sup> Nuclear

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<sup>29</sup> Anwar Habib, "Nuclear Regulatory Regime in Pakistan," *The South Asian Strategic Stability Institute (SASSI) University*, December 31, 2018, Available at: <http://sassi.org.pk/nuclear-regulatory-regime-in-pakistan/> (accessed on 25 June 2020).

<sup>30</sup> "National Institute of Safety and Security," *Pakistan Nuclear Regulatory Authority*, Available at: <https://www.pnra.org/hrd.html> (accessed on 20 June 2020).

Emergency Management System (NEMS) is another important body in coordination with PNRA and PAEC that works for timely response and management of nuclear and radiological emergencies. Whereas 'Nuclear and Radiological Emergency Support Centre-(NURESC)' is responsible to implement the policies of NEMS and works as the central point at domestic level.

- **Strategic Exports Control Division (SECDIV):** Pakistan's national nuclear regime also comprises of export control domestic legal framework and significant efforts have been made to create Export Control Act in 2004, which is in line with the international export control arrangements i.e., 'Nuclear Suppliers Group.' This includes 'dual use items; material and technology related to nuclear, and biological weapons. In order to effectively maintain this system Pakistan has created a comprehensive set of rules, procedures, safety, and security mechanisms under the export control authority in the Ministry of Foreign Affairs, namely "Strategic Exports Control Division (SECDIV)." It is a complete set to deal with inside threats, outside and cyber threats to nuclear security. The system is based on 5Ds that are deter, detect, delay, defend and destroy.<sup>31</sup>

The core purpose of this institute is to control and restrict illegal import/export of nuclear material and technology. SECDIV keeps the Export Control list updated and under review. SECDIV organized an international seminar on international

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<sup>31</sup> Noreen Iftikhar, "International Nuclear Law: A Case Study of Pakistan," *Institute of Strategic Studies Islamabad*, Vol. 38, no.4 (2018), 75.

export control in 2018 which was attended by 240 experts from 49 countries.<sup>32</sup>

### iii. International Cooperation

Incidents like Chernobyl in 1986, attack on World Trade Centre in 2001 and Fukushima Daiichi accident in 2011, have been constantly reminding and pushing international efforts towards continuous development process of nuclear safety and security. "International cooperation is vital to ensure global nuclear security," stated by the IAEA Director General during the last Nuclear Security Summit in Seoul, held in South Korea.<sup>33</sup> He further added that: "Ensuring that nuclear power plants are fitted with multiple safety systems helps both to prevent accidents and to guard against possible sabotage."<sup>34</sup>

Given the potential vulnerabilities of nuclear materials and technology, Pakistan has always considered the safety and security of its nukes as a top priority that is also reflected in the official statement of Pakistan during 2016 Nuclear Security Summit:

As a responsible nuclear state, Pakistan takes nuclear security very seriously and accords it the highest priority in its security construct. Our nuclear security paradigm, evolved over the years, is effective and responsive against the entire range of possible threats. Nuclear security

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<sup>32</sup> "International Export Control Seminar: The Present and Future of Strategic Export Controls," *Strategic Export Control Division*, May 10, 2018, Available at: <http://www.secdiv.gov.pk/seminars-workshops/secdiv-international-export-control-seminar-9-10-may-2018-islamabad> (accessed on 2 July 2020).

<sup>33</sup> Pakistan's National Statement at Nuclear Security Summit Washington, 31 March-1 April 2016," *Ministry of Foreign Affairs Government of Pakistan*, Available at: <http://mofa.gov.pk/pakistans-national-statement-nuclear-security-summit-washington-31-march-1-april-2016/> (accessed on 2 July 2020).

<sup>34</sup> Ibid.



regime in Pakistan is dynamic and regularly reviewed and updated.<sup>35</sup>

Pakistan is contributing to the international efforts to strengthen nuclear safety and security culture by collaborating with other states and taking adequate measures to fulfil its commitments under international agreements.

- **Cooperation with IAEA to strengthen Nuclear Security:** Pakistan has a long-standing cooperative relationship with IAEA since its inception and has received significant technical support from IAEA to successfully develop its peaceful nuclear program as Pakistan was one of the early recipients of nuclear technology under Atom for Peace Agreement and received assistance from US, Canada, and France. In view of Pakistan's efforts to maintain nuclear safety and security it has always been given respect by the agency as a proponent of peaceful application of nuclear technology. In 1965 Pakistan promulgated Pakistan Atomic Energy Commission Ordinance, which gave PAEC a statutory status and autonomy to interface with IAEA on making commitments under the IAEA safeguards.<sup>36</sup> Pakistan signed its first agreement with IAEA on Pakistan Research Reactor-1 in 1962. Recently, Pakistan signed a tripartite agreement with IAEA in 2017 on two nuclear power stations, which it will receive from China.<sup>37</sup>

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<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> "Pakistan agreement with IAEA," *International Atomic Energy Agency*, accessed June 20, 2020, Available at: <https://www.iaea.org/newscenter/news/signing-of-a-safeguards-agreement-with-pakistan> (accessed on 5th March 2021).

Pakistan’s agreements with IAEA are item specific or facility specific, being a non-NPT state and comes under 66 type of safeguards. Pakistan has made several arrangements with IAEA which are as follows:

Table 7.1: Pakistan’s Nuclear Arrangements under IAEA Safeguards

Sr no.	Agreement	Signing date
1.	Pakistan Research Reactor – 1	1962
2.	Karachi Nuclear Power Plant – Unit 1	1968
3.	Pakistan Research Reactor– II (PARR-II)	1991
4.	Chashma Nuclear Power Plant -Unit 1 (C-1)	1998
5.	Chashma Nuclear Power Plant -Unit 2 (C-2)	2007
6.	Chashma Nuclear Power Plant -(C-3& 4)	2011
7.	Karachi Nuclear Power Plant-Units 2 & 3	2017

Source: Pakistan Atomic Energy Commission (Sept 24, 2018)  
<https://www.iaea.org/resources/legal/country-factsheets>

Pakistan’s relations with IAEA are reciprocal. It is not only Pakistan that has benefitted from the technical support IAEA has provided, but Pakistan is regularly contributing to IAEA efforts for the security of nuclear technology. Pakistan has voluntarily offered its nuclear expertise and human resource to IAEA and to its member states. Pakistan Centre of Excellence on Nuclear

Security (PCENS)' is a specialized institute in the Pakistan's nuclear security system. Pakistan offered to be the hub for capacity building trainings regionally and internationally under the auspices of IAEA, during the Nuclear Security Summit 2012.

According to the report of Pakistan Foreign Ministry more than 6500 personnel from over 40 IAEA member states have been trained so far in security and intelligence, physical protection, material accounting, delay & response system.<sup>38</sup> In 2016, the Global Network for 'Nuclear Security Training and Support Centres (NSSC Network)' had its meeting in Pakistan, which was held outside Vienna for the first time. The meeting was headed by Pakistan's PCENS that is the major training hub of Pakistan on nuclear security and hosted 50 participants from more than 25 countries.<sup>39</sup>

Pakistan's relationship with IAEA has sustained from several decades as it is evident from Pakistan becoming a member of IAEA Board of Governors in 2018 for the 20th time and has chaired the Board thrice.<sup>40</sup> Furthermore, Pakistan is contributing to the annual IAEA's Nuclear Security Fund 2018 – 2019.

- **Bilateral Agreement with India:** The India-Pakistan bilateral agreement is an exclusive arrangement based on Non-Attack

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<sup>38</sup> Ministry of Foreign Affairs, "Pakistan's Nuclear Security Regime," *MOFA*, 2020, Available at: <http://mofa.gov.pk/wp-content/uploads/2020/02/NSRFinal08-02-2020.pdf> (accessed on 22 July 2020).

<sup>39</sup> "International Network for Nuclear Security Training and Support Centers, NSSC Network Annual Meeting," *PNRA*, Available at: <https://www.pnra.org/NSSC.html> (accessed on 22 July 2020).

<sup>40</sup> Aabha Dixit, "New Members Elected to IAEA Board of Governors," *International Atomic Energy Agency*, September 19, 2019 Available at: <https://www.iaea.org/newscenter/news/new-members-elected-to-iaea-board-of-governors-19-september-2019> (accessed on 28 July 2020).

policy, under which both the states will not target the nuclear facilities of each other. The agreement was signed in December 1988 and entered into force in January 1991 known as "Agreement on Prohibition of Attacks against Nuclear Installations and Facilities between Pakistan and India."<sup>41</sup> According to the agreement both states will refrain from participating or undertaking any activity to cause harm to the nuclear facilities of each state. As prescribed in the treaty text: "Works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, as such attack may cause the release of dangerous forces and consequent severe losses among the civilian population."<sup>42</sup> Furthermore, the treaty requires each state to share the nuclear installation list on the 1<sup>st</sup> of January each year to avoid any misadventure in the event of war.

- **Support from China:** Pakistan is an all-weather friends with China. Both states share a mutually beneficial relationship. China has immensely supported Pakistan in building its nuclear power program. However, all arrangements have been made under IAEA safeguards.
- **Cooperation with the United States:** Pakistan in 2010 was invited by then US President Barrack Obama to participate in the Nuclear Security Summits. Pakistan accepted to be a part of this initiative as a responsible nuclear state and have made significant efforts

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<sup>41</sup> "India-Pakistan Non-Attack Agreement," *Nuclear Threat Initiative*, October 26, 2011, Available at: <https://www.nti.org/learn/treaties-and-regimes/india-pakistan-non-attack-agreement/> (accessed on 2 February 2021).

<sup>42</sup> Ibid.

to incorporate takeaways of the NSS into its national nuclear security regime. Pakistan has updated the security measures at all medical and agriculture centres and is upgrading the security measures at its nuclear power plants. Pakistan also started a training academy under the Strategic Plans Division and is working on setting up a school on Nuclear and Radiation Safety. Pakistan also voluntarily agreed to collaborate with IAEA on its "Incident and Trafficking Data Base."<sup>43</sup>

Moreover, to stop illicit trade and trafficking of nuclear and radiological materials, Pakistan has adopted the US governments "Container Security Initiative."<sup>44</sup> For this purpose, Pakistan has formulated a detection architecture at national level and has stationed this detection system at all the entry & exit points at Port Qasim, Karachi since 2007 and regularly upgrades this facility.

### **Pakistan's domestic nuclear governance and international politics**

There have always been speculations about the safety and security of Pakistan's nuclear program, mainly related to nuclear theft or sabotage from Pakistan's nuclear sites by a third party with an insider help, or a militant group. The on-ground reality however is different from what scholars and experts believe outside Pakistan. These concerns are more political than security related.

As discussed in the previous sections, Pakistan has the most improved infrastructure to deal with nuclear theft and sabotage and it has been proactively participating in several global initiatives to play its

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<sup>43</sup> Ministry of Foreign Affairs, "Pakistan's Nuclear Security Regime," *MOFA*, 2020, Available at: <http://mofa.gov.pk/wp-content/uploads/2020/02/NSRFinal08-02-2020.pdf> (accessed on 3 March 2021).

<sup>44</sup> *Ibid.*, 26.

role in nuclear safety and security. This has been occasionally highlighted by officials as former US Department of Defense official Lawrence J. Korb mentions that “given the strategic location of Pakistan and the fact that it has nuclear weapons, it’s easy to see why some might embrace a worst-case scenario. But based on my visit, I don’t buy it at this time.”<sup>45</sup>

Brigadier Zahir ul Haider Kazmi from ACDA branch of SPD, in an interview with Tom Hundley in 2018, emphasized on the importance that Pakistan attaches to the safeguarding of nuclear weapons in a challenging regional environment by highlighting that “who made the case that Pakistan is not much alive to manage the dangers to its nuclear weapons at sea. We are confident yet not complacent.”<sup>46</sup> He added that “Managing nuclear safety and security is not a white man’s burden only, Pakistan is managing its responsibilities quite well. There is a deliberate tendency to forget that Pakistan’s record is as good, if not better, than that of the US.”<sup>47</sup>

Furthermore, Pakistan’s Prime Minister, Imran Khan while responding to an interview question stated that “they have absolutely no need to worry about Pakistan's nuclear weapons because Pakistan has one of the most professional armies, we have one of the most comprehensive command and control of our nuclear weapons, ... The United States knows about it because we share our intelligence with

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<sup>45</sup> Lawrence J. Korb, “The Security of Pakistan’s Nuclear Arsenal,” *Bulletin of the Atomic Scientists*, May 19, 2009, Available at: <http://www.thebulletin.org/web-edition/features/the-security-of-pakistans-nuclear-arsenal> (accessed on 5 February 2021).

<sup>46</sup> Tom Hundley, “India and Pakistan are quietly making nuclear war more likely Both countries are arming their submarines with nukes,” *VOX*, April 4, 2018, Available at: <https://www.vox.com/2018/4/2/17096566/pakistan-india-nuclear-war-submarine-enemies> (accessed on 5 February 2021).

<sup>47</sup> *Ibid.*

the US about the way we have the safety measures about our nuclear programme.”<sup>48</sup>

There is also a debate on the privacy policy of Pakistan's nuclear weapons program that is being considered as a hurdle in analysing the real situation on ground. As mentioned on several occasions by experts that the security situation in South Asian region is not favourable and Pakistan will never allow access to country's strategic facilities and sensitive information.<sup>49</sup> However, the promotion and collaboration on developing an academic discourse and national narrative on Pakistan's nuclear security regime will further reinforce the overall security culture. The disconnect between the academic understanding of nuclear security and the reality, blocks the way to global discussions on the real efforts being carried out by Pakistan.

Furthermore, Pakistan has always been accused of insider proliferation threats based on Abdul Qadeer Khan's episode, which is long gone, and Pakistan has come quite far in building up strong institutions and achieving international standing as a responsible nuclear weapon state. Pakistan has taken several measures to ensure the security of nuclear technology and materials and submits regular reports to the committee of 1540 Resolution. According to the recent report submitted by Pakistan in 2017, Pakistan's compliance with UNSC 1540 resolution is more than 80%.<sup>50</sup> Furthermore, Pakistan has

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<sup>48</sup> Bret Baier, "Interview: PM Imran talks peace with Taliban, meeting Trump and 'concerns' about Pakistan's nuclear weapons," *Dawn*, July 23, 2019.

<sup>49</sup> Paul K. Kerr and Mary B. N, "Pakistan's Nuclear Weapons: Proliferation and Security Issues," *Congressional Research Service*, July 20, 2011, Available at: [https://www.everycrsreport.com/files/20110720\\_RL34248\\_9faafe233c8fedae84d9d65bd9257f5452bcc00.pdf](https://www.everycrsreport.com/files/20110720_RL34248_9faafe233c8fedae84d9d65bd9257f5452bcc00.pdf) (accessed on 3 March 2021).

<sup>50</sup> Zawar Abidi, "Nuclear Suppliers Group: Prospects and Problems for India and Pakistan," interviewed by Shahneela Tariq as a part of her M.Phil. Research thesis, April 2018.

voluntarily joined 'Global Initiative to Combat Nuclear Terrorism- (GICNT)' in 2007, which is a joint initiative of Russia and the US for the detection of and response to nuclear theft and sabotage.

Human factor is a vital component of nuclear security. Be it a physical protection or a radioactive protection, the management and leadership play an important role ranging from policy making to the execution of the regulations and transfer of radioactive material. A small, though unintentional error can lead to a disaster. IAEA has put great stress on the importance of human factor in Nuclear Security Regime. Pakistan, since beginning has taken this issue seriously. To incorporate this international practice into the national nuclear architecture, Pakistan took extensive measures soon after testing nuclear device in 1998. In the same vein, in 2000, then President Pervaiz Musharraf announced National Command Authority, an independent body, to vigilantly run the business of command and control of Pakistan's nuclear program.

Pakistan replaced 'Nuclear Safety and Radiation Protection Ordinance-1984' with Pakistan Nuclear Regulatory Authority Ordinance 2001 that established another important entity named Pakistan Nuclear Regulatory Authority (PNRA). The PNRA Ordinance prohibits persons or entities from the manufacturing, production, acquisition, and development of nuclear material if they did not possess a license from PNRA. Additionally, PNRA works as the implementing body for the nuclear civil liability conventions to reduce the risk of trans-boundary damage, and nuclear accidents.<sup>51</sup> In order to effectively manage the nuclear security system PNRA in cooperation with IAEA has introduced National Security Action Plan in 2006 to ensure the safety and security of nuclear material and facilities to prevent illegal nuclear trade and provide immediate response to nuclear accidents.

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<sup>51</sup> Naeem Salik, *Nuclear Pakistan; Seeking Security & Stability* (Islamabad: University of Lahore, Printing Press, 2018), 23.



Under NSAP, the National Nuclear Security Emergency Coordination Centre was established in line with IAEA security series titled “The Physical Protection of Nuclear Material and Nuclear Facilities.”<sup>52</sup> It effectively collaborates and coordinate with other components of security system, i.e., Customs, border forces, provincial governments, and police department of all areas. Furthermore, in compliance with the “Convention on Early Notification of a Nuclear Accident,” and “the Convention on Assistance in the Case of a Nuclear Accident,” Pakistan established “Emergency National Radiation Emergency Coordination Centre (NRECC).”<sup>53</sup> It is a fully equipped centre, dedicated to meet emergency needs nationwide and abroad.

Pakistan became a member of the “Convention on the Physical Protection of Nuclear Material (CPPNM)” in 2000 through accession,<sup>54</sup> which provides a mechanism to states for cooperation during international transfer of nuclear material and technology. CPPNM also lists serious offences regarding nuclear material and oblige state parties to incorporate certain measures to make those acts punishable in their national legislation. National Command Authority Act of Pakistan has set out comprehensive rules and regulations which contain special provision of act of proliferation as an offence and provides a detailed mechanism for the prosecution of such offence. Pakistan has also ratified amendment to the CPPNM in 2016,<sup>55</sup> which

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<sup>52</sup> Pakistan Nuclear Regulatory Authority, “PNRA Report 2007,” *PNRA*, 2017, Available at: <https://www.pnra.org/upload/pnrarpt/PNRA%20Report-2007.pdf> (accessed on 24 March 2021).

<sup>53</sup> *Ibid.*

<sup>54</sup> “Arms Control and Proliferation Profile: Pakistan,” *Arms Control Association*, July 2018, Available at: <https://www.armscontrol.org/factsheets/pakistanprofile> (accessed on 3 March 2021).

<sup>55</sup> Vincent Fournier, “Road Towards Entry Into Force of Key Nuclear Security Agreement,” *IAEA*, April 8, 2016, Available at: <https://www.iaea.org/newscenter/news/road-towards-entry-into-force-of-key-nuclear-security-agreement> (accessed on 26 March 2021).

demonstrate that Pakistan has taken appropriate measures in the nuclear security domain. The ratification of this amendment is also an indication that Pakistan will now be working on upgrading its policies on nuclear material in physical use, storage, and nuclear transportation.

According to Gen. Khalid A. Kidwai, Pakistan has a proven record of nuclear safety and security and it should be a part of all international trade arrangements without any restrictions because Pakistan is fully integrated into international nuclear mainstream. It is a high time to discard discriminatory approach towards Pakistan.<sup>56</sup>

### **Conclusion**

Pakistan's nuclear security regime is based on robust efforts including, command and control system under National Command Authority, an integrated intelligence network, nuclear regulatory regime, comprehensive export control laws and regulations, and international cooperation on the security of nuclear technology. However, Pakistan is the only country in the world, which has been forced to prove its national nuclear security measures at all levels. Whereas there has not been a single testimony at international level which shows that Pakistan has not done enough to secure its nuclear program.

Pakistan is a fully capable state in terms of ensuring nuclear security which is apparent from its voluntary participation in Nuclear Security Summits and other international arrangements on nuclear safety and security. The literature that has been produced so far questioning the security of Pakistan's nuclear program is not close to reality but presents a biased opinion. According to Pakistani and international officials, Pakistan's nuclear power plants and nuclear

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<sup>56</sup> Ibid., 5.

assets are well protected and are as safe as any other developed nuclear weapons state's assets are.

There is a well-coordinated and carefully laid out command and control system matured with several years of rigorous visible developments. Pakistan has specially trained a huge number of personnel to protect its nuclear materials and technology, which includes all of its military and civil intelligence. No other country in the world has developed such technical skills in nuclear security and Pakistan has a lot to offer to the outside world in trainings and manpower.

Pakistan is a respectable member state of international community which possesses the capability and skills to contribute to the peaceful use and application of nuclear technology. It has a clean record of safety and security of its civilian nuclear program under the safeguards of IAEA and has taken significant and stringent measures during the last two decades to comply with the international nuclear law.