

Atoms for Control: Peaceful Nuclear Technologies and the Neocolonial Dynamics of Global Nuclear Power Structures

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ABSTRACT

This paper analyzes the global nuclear order with the help of a neocolonial perspective with special reference to the governance and regulation of the Peaceful Nuclear Technologies (PEANUTs) and how it widens the structural dependencies and reinforces the geopolitical hierarchies. It also highlights the dilemma where nuclear energy rhetoric is promoted as clean and sustainable; however, access to it is hindered through the politicized, discriminatory Nuclear Nonproliferation Regime (NPR), as embodied in the Non-Proliferation Treaty (NPT) and the Nuclear Suppliers Group (NSG). This hierarchical structure created a core-periphery structure where the ‘Nuclear Haves’ control the autonomy of the ‘Nuclear Have-nots.’ This study draws upon the Neocolonial Theory, World-System Theory, Subaltern Realism, and Technopolitics to critically examine the functioning of PEANUTs in perpetuating technological imperialism, narrative asymmetry, and dependency. Taking comparative analysis of India and Pakistan as a case study, it highlights the need of an inclusive PEANUTs regime that democratizes the technological transfers on the basis of the international standards of nuclear safety and security and not strategic alignments.

Key Words: Peaceful Nuclear Technologies (PEANUTs), Technopolarity, Nuclear Sovereignty, Narrative Asymmetry, Nuclear Apartheid, Neocolonialism

Introduction

Nuclear energy is widely attributed as one of the most sustainable solutions to the global energy crisis. Being a clean and cheaper source of energy, it is a desired option to meet the global net zero goal. At the recent COP 30, new entries of Rwanda and Senegal joined the coalition of 30 states that pledged to triple the share of nuclear energy in their power generation by 2050. (*“More Support for Tripling Global Nuclear Capacity*, 2025) Globally, approximately 70 nuclear power plants are under construction in 15 countries. (International Energy Agency, 2025) Only in the United States, states have opened dedicated offices working on the expansion of nuclear energy infrastructure. (McEwen, 2026) Henceforth, every year marks the exponential rise in states pledging to commit resources in gaining

energy sovereignty from the unclean unreliable sources of energy. However, this optimistic narrative is overshadowed by the 'Atom Realpolitik' prevailing in the Nuclear Nonproliferation Regime (NPR), where the determinant of nuclear technology is shaped by the political alliance than the nuclear security and technical merit. What originated as an initiative of 'Atom for Peace' has become an 'Atoms for Control' due to the uneven and unfair distribution of the Peaceful Nuclear Technologies (PEANUTs). (Khan, 2025) It has given birth to a neocolonial (Kponyo et al., 2024) nuclear regime where the institutional frameworks hinder the adoption of nuclear technology for peaceful purposes thereby concentrating the PEANUTs in handful states.

This study interrogates the negative impact on the Global South due to the uneven distribution of the PEANUTs. (Kponyo et al., 2024) Instead of following the normative principles and regulations, their transfer manifests the neocolonial imperatives. The geopolitical hierarchy enshrined in the PEANUTs export control groups such as Nuclear Suppliers Group (NSG) (Akhtar, 2016) functions on strategic and political alignments and not on technical capacity for international standards of Nuclear Safety and Security (NSS).

Theoretical Framework

This study uses a multi-theoretical framework and triangulation of theories to explore the global nuclear landscape. It draws from the Neo-Marxist theory of World System, Subaltern Realism drew from Classical Realism, and Technopolitics. These theories examine how PEANUTs are used as a neocolonial tool. (Kponyo et al., 2024) Neocolonial Theory explains how former colonial powers, now major powers, control post-colonial states using indirect methods. These include technological dependency, institutional gatekeeping, and economic conditions. (Kponyo et al., 2024) In the PEANUTs governance system, this means the Global North controls nuclear technology, fuel, and expertise to maintain its dominance over the Global South. (Clausen & Pejstrup, 2024) This control is enforced through the Nonproliferation Treaty (NPT) and NSG, which help sustain the global technological divide. (Clausen & Pejstrup, 2024)

The World-System Theory gives the concept of Core-Periphery, (Christofis, 2019) which expands the PEANUTs governance debate. According to this, the Core states are primarily the NPT-recognized nuclear weapon and nuclear non-weapon states that hold a monopoly over the global PEANUTs infrastructure. Whereas, the Periphery are the developing states that have not acceded to the NPT. As defined by Muhammad Ayoob, Subaltern realism (Ayoob, 2002) contains the core realist concepts of statism, survival and self-help. (Ayoob, 2002) It challenges the narrative asymmetry as manifested by the major states that define legitimacy as best suited to their strategic intent. The intraperipheral differentiation given by the Subaltern Realism explains the discriminatory behavior of NPR, where certain states are favored and granted strategic waivers, whereas others are denied of their strategic rights, based on compliance to NSS performance. (Kazmi, 2025)

Lastly, the concept of Technopolitics, which was developed by Gabrielle Hecht, conceptualizes the partiality of certain technical standards. (Gagliardone, 2016) As in the case of PEANUTs, selective enforcement of rules and grant of waivers and licensing of Small Modular Reactor (SMR) emphasizes geopolitical objectives cloaked in the guise of nonproliferation. (Kazmi, 2025) Together, this

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theoretical framework illustrates the PEANUTs regulatory system as a neocolonial tool where ‘Atoms for Peace’ has been reduced to ‘Atoms for Control,’ (Kazmi, 2025) thereby hindering the ‘Atoms for All.’

The Illusion of Peaceful Use under the NPT

The illusion of universality and peaceful use is manifested in the implementation of the NPT. The clear dichotomy between rhetoric and reality gets evident when the Treaty grants rights of nuclear peaceful use but restricts the nuclear energy independence. The bifurcation between the peaceful and military use is often interchangeably perceived that the latent weapon potential guides the policing. (Kazmi, 2025) NPT imposes neocolonial nuclear order by overshadowing the clause of peaceful uses of nuclear technology by the nonproliferation imperatives. The global nuclear energy divide underpinned by the NPR functions as a neocolonial system that enforces the nuclear dependency of the Global South. This monopoly over nuclear technology is maintained through the key technologies enabling nuclear fuel cycle, supplier-recipient dynamics, and economic leverage. (Clausen & Pejstrup, 2024)

Nuclear Dependency of the Neocolonial Nuclear Regime

Core-Periphery Structure of the Nuclear World Order

The contemporary global nuclear world comprises of three tiers of nuclear power states: NPT-recognized Nuclear Weapon States (NWS), NPT-recognized Non-Nuclear Weapon States (NNWS), and Nuclear Armed States (NAS), which are outside NPT. Besides them, are the developing states possess nuclear energy landscape that supports various sectors, they are still devoid of the peaceful nuclear technological autonomy.

Through the lens of the World-System Theory, the global NPR forms two divisions as Core-periphery structure. Peaceful nuclear technologies are amassed in the core states, primarily NPT-recognized Nuclear Weapon States (NWS) and Non-Nuclear Weapon States (NNWS) that are also known as *de jure* nuclear states. Those states dependent upon core are the periphery, the NAS, with *de facto* nuclear power status. NAS are outside of the Nonproliferation treaty (NPT) due to their national interests and not having nuclear exceptionalism. (“Safety of Nuclear Power Reactors , n.d)

Technological Imperialism and the Nonproliferation Regime

The technological imperialism (Regilme, 2025) of nuclear energy is enforced by the NPR. Neocolonial theory views the global NPR as a system that creates dependence among the states by restricting nuclear energy autonomy of the less developed states. At the core of NPR, lies the NPT that divides the states into haves and have-nots. According to the treaty, only the nuclear weapons of the US, Russia, China, France, and United Kingdom are recognized to be *de jure*, as they were detonated prior to the NPT’s promulgation. (United Nations, 1968) While there is no significant international mechanism of vertical nonproliferation in

place, all the other states are subjected to tough scrutiny to prevent horizontal proliferation. (Cronberg, 2021)

Geopolitical Control through Supplier-Recipient Dynamics

The dependency factor is further reinforced by the supplier states through the long-term fuel purchase contracts. Mostly, such contracts undermine nuclear fuel cycle sovereignty of the recipient states by restricting their domestic nuclear energy production capabilities. The countries in the Global South such as Brazil, South Africa, and Iran that vied to attain nuclear energy autonomy being their sovereign right were met with strict geopolitically containing tools. They were subjected to sanctions, political resistance, and the agreements ensuring strict international surveillance. (Yudin, 2013)

The barriers associated with NPR are encountered at different stages of the nuclear energy production cycle. Critical fuel cycle technologies that are involved in stages of the fuel cycle such as enrichment, reprocessing, and heavy water production, (Yudin, n.d.) abound in the NPT-recognized NWS and NNWS, while the NAS are dependent upon the former states. For the dependent states to achieve fuel autonomy, nuclear enrichment and reprocessing (ENR) is inevitable. NPR restrictions create dependency upon the supplier states (NWS and NNWS) for fuel. (Clausen & Pejstrup, 2024)

The Political Economy of Nuclear Inequality

The structural asymmetry of the global nuclear energy division which is propelled by the nuclear regulatory regime translates into the whooping cost of the nuclear political economy. Global South relies upon the nuclear technology Core states and cover the average cost of nuclear construction and maintenance that roughly costs around USD 6-9 billion per 1000-Megawatt nuclear reactor. (Yudin, 2013) The atomized inequity comes in the form of financial packages tied with geopolitical considerations. This structure denotes the neo-Marxian perspective of periphery control (Christofis, 2019) where they have to rely upon the Core states for technological interests.

The supplier-recipient model through the NPR entrenches the nuclear energy divide and solidifies the nuclear energy dependency. (Clausen & Pejstrup, 2024) Those dependencies are apparent in the data highlights of global nuclear energy infrastructure. Currently, among the 440 nuclear reactors ("Nuclear Power in the World Today", n.d.) operating worldwide, 75% of them are located in developed or NPT-recognized NWS. Similarly, the geography reinforces the division as the uranium mining is also concentrated in the developed in Australia, Kazakhstan, Canada, and Namibia with the percentages of 33%, 40%, 13%, and 8% respectively. ("World Uranium Mining Production", n.d.) Despite that the nuclear reactors are widely distributed across the globe; indigenization of nuclear fuel cycle capabilities is curtailed. Thus, the regime works purely on the basis of geopolitical affiliations rather than technical and safety considerations and nuclear safety credentials of a state. (Yudin, 2013)

In the light of neo-Marxian perspective (Verbeek, 2017) of imperialist control of technology under the NPR, developed states are the providers of nuclear technology, equipment, fuel and expertise but at their own conditionalities that

most of the times curtail the nuclear autonomy of the developing state. (Yudin, 2013) The supplier-recipient model works through the export control regimes, bilateral agreements, and technology transfer limitations.

Peaceful Nuclear Technologies (PEANUTS) as a Neocolonial Tool

PEANUTs are employed as a tool of Neocolonial (Kponyo et al., 2024) control. The western powers use the regimes as Nuclear Suppliers Group (NSG) to form political alignments. States adhere to the norms of those regimes for the technology transfers. The structural dependence widens the bifurcation of the global nuclear order that functions by strategic alliances and not the technological competence. PEANUTs are used as strategic instruments that dictate the scope of nuclear developments for the states. Henceforth, the patterns of technological domination are rationalized through the discriminatory language of nuclear nonproliferation. (Yudin, 2013)

Nuclear technology provider states control strict hegemony over the uranium ENR technologies. The nuclear technology trade is carried out in accordance with the NSG guidelines which mandates the membership of NPT and nuclear facilities under full-scope International Atomic Energy Agency (IAEA) safeguards. Through this structural dependence, recipient states are subjected to the external pressure of the provider states. (Akhtar, 2016)

Through the intraperipheral differentiation within the neocolonial regimes, the recipient states that align with the powerful western bloc receive exemptions and waivers. (Kazmi, 2025) The normative foundations of the system are undermined when the technological access is granted to serve hegemonic interests by giving access to the PEANUTs on discriminatory basis. Headrick illustrates the mechanism by mentioning, 'technologies are never evenly distributed...those who possess a given technology share with others, withhold it from them, or use it against them.' (Headrick, 1979) Similarly, in the case of the distribution of PEANUTs, this behavior is translated in the actions of the recipient states. They leverage nuclear technology to create dependencies and shift alignments. (Kazmi, 2025)

A pertinent case in point for the selective intraperipheral approach is evident in case of India. Despite being a non-NPT state and failing to meet the basic NSS standards, India was given access to the latest nuclear technology. India committed to the IAEA in 2009 through a safeguard agreement to separate civilian and military nuclear facilities and adopt IAEA full-scope safeguards but the commitment remains unfulfilled. Among the unsafeguarded nuclear facilities of India are eight civilian nuclear facilities, fast breeder reactors, and a range of nuclear fuel cycle facilities. Even the safeguarded are applied on temporary basis with the ever-high risk if unsafeguarded nuclear material being substituted in the nuclear fuel cycle and causing potential diversion. Such an ambiguity blurs the boundary between the peaceful and military uses of the nuclear facilities. Similarly, the additional protocol (AP) that India signed with the IAEA is unprecedented in terms of its applicability that a great part of its domestic civilian nuclear facilities is unsafeguarded. AP covers only the nuclear export of India, leaving the nuclear material, facilities, and equipment in the territory of India remain non-transparent. That further complicates the safeguard verification

mechanisms and weakens the compliance record, thereby increasing the risk of nuclear proliferation increase manifold. Among the other domestic structural deficiencies, India lacks an independent nuclear regulatory authority and its export control framework does not meet the international standards. Hence, in the absence of an independent regulatory authority, increases the chances of the accidental release and the illicit diversion of nuclear technologies. (Akhtar, 2016)

Besides those structural discrepancies, India also showed consistent ignorance to the global nuclear nonproliferation initiatives. India refused to sign the Comprehensive Test Ban Treaty (CTBT) and actively blocks its entry into force. (Gopalaswamy, 2010) The unsafeguarded military nuclear facilities and civilian also continue to grow in numbers. On the contrary, India is strategically armed and granted nuclear waivers along with the access to the latest nuclear technologies while sidestepping their international consequences. While selectively engaging with the multilateral nonproliferation efforts, India also bypasses the NSG 2011 decision that require NPT adherence to transfer uranium ENR technologies as its domestic export control framework lacks any such regulation.

In spite that the NSG portrays to be an impartial and rules-based regime, its decisions reflect otherwise. (Hibbs, 2017) Several exceptions pertaining has been granted to some states with disregard to their noncompliance to the global nuclear transparency, only because they serve the interests of the major powers. This reflects the erosion of NSG's normative basis and bias in applying rules ununiformly. (Hibbs, 2017) Headrick defines such a system as an imperial system where the 'withholding of technologies are used as soft coercion.' He goes on and says that 'what we really mean by the "Man's power over nature" is a power exercised by some men over other men with a knowledge of nature as their instrument.' (Headrick, 1979) This way, the nuclear technologies become more of a tool of political dominance than the peaceful development.

With the arrangements as NSG, major powers employ knowledge monopoly to perpetuate the imperial control. Through the subjective definitions of the legal guidelines, the regime covers the imperial decisions. This reinforces the Headrick's assertion that the 'technological superiority' (Headrick, 1979) is used to justify and perpetual imperial control, not just through conquest, but through institutional dominance and knowledge monopolies. Headrick furthers the argument that the western expedition was supported by the economic, strategic and religious means. (Headrick, 1979) Linking this to the modern regulatory system of the global nuclear landscape, the PEANUTS are being regulated through their disciplinary deviance just to reinforce the older colonial dynamics. Eventually, the uneven distribution of nuclear technologies resembles to the Headrick's 'disparities in knowledge of nature' (Headrick, 1979) which he mentions as core to the imperial power. Such politicized institutional practices shape the development of the Global South.

The neocolonial nature of the PEANUTS governance results into various negative realities. Not only does it undermine the nuclear sovereignty of the developing states they increase the global nuclear security risks as well. Nuclear exceptionalism through intraperipheral differences hamper the independent regulation of the sensitive nuclear technologies. The strategic interests sidestepping the best governance practices increase the risk of oversight in the safe and secure use of the PEANUTs. The alarming deficiencies in the domestic nuclear structures of the favored states can culminate into a global nuclear disaster.

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(Akhtar, 2016) Similarly, it perpetuates the global nuclear hierarchy that replicates the previous patterns of political dominance. Headrick explains the phenomenon as: ‘the greater power over nature that superior technology provides does not necessarily confer power over people with less advanced technologies...yet the pursuit of ever more advanced technologies continues unabated and, with it, the temptation to use them against other peoples.’ (Headrick, 1979)

Atoms for Peace or Control?

The discourse on the PEANUTS is surrounded by the dualities between the promise and peril. Where it is promoted for being a clean, cheap and a reliable source of energy, (Khan, 2025) the geopolitical and ununiformed regulations replicate the historical power asymmetries. The emergence of the post-World War II nuclear governance structure is deeply entrenched by the historic strategic interests. The contemporary regime pertaining to the PEANUTs supply chain regulations was formed under the auspices of NPT’s article IV, yet under the monopoly of the nuclear imperial powers. (Cronberg, 2021)

Contemporary thinkers often relate the inherent contradictions of global nonproliferation regime that are shaped by the cold war paradigms, uneven access to PEANUTs, and dual use dilemma. Those dangerous parallels necessitate the urgent nuclear governance reforms by making it an inclusive, multipolar and sustainable development oriented one that fulfills promise of “Atoms for Peace”.

Structural Redundance of the PEANUTS Nonproliferation Regime

Contemporary nonproliferation regime is based upon the redundant power structures when the bipolarity of the world politics was the sole determinant of the global strategic stability. Frank Rose, former US Assistant Secretary of State for Arms Control mentions that this framework is ‘designed for a different world.’ He believes that the today’s complex problems and multipolar realities are unable to accommodate the evolved geopolitical terrain. the traditional arms controls are insufficient to accommodate the new nuclear actors. (Rose, 2024) Dan Zhukov, a scholar at Berkeley Risk and Security Lab, furthered that the ‘possible emergence of the Cold War 2.0’ due to the fragility of the system in place. The discrepancies in normative standards coupled with the deliberate exclusion of the nuclear energy aspirant states further weaken it. (Zukhov, 2024)

Dr. Peter Layton, Associate Fellow at the Royal United Services Institute (RUSI), asserts that the peaceful uses of nuclear technology is conditional to the whims of the great countries. He articulates: ‘the peaceful uses are those defined by them and for the countries defined by them’, which reflects the structural bias in nuclear energy cooperations. The stark example is the differential treatment of the India and Pakistan, where the former despite the technical deficiencies was granted access to the sophisticated PEANUTs, while the later was denied despite having an ‘outclass nuclear safety and security framework’. This causes the structural dependency which is parallel to the soft imperialism. (Layton, 2025) As in the words of Zhukov, the ‘heavy reliance of the recipient states on foreign personnel for training and regulatory guidance may foster a form of long-term

structural dependency.’ (Zukhov, 2024) Such dependencies undermine the national autonomy and widen the asymmetries of PEANUTs in the techpolar world.

International regulatory norms as dual-use dilemma is often cited as a condition to withhold the transfer of PEANUTs and mask the geopolitical considerations. With the fallacious rationales as this, the regime weaponizes the dilemma and continue the gatekeeping practices that affect the developing disproportionately.

Small Modular Reactors (SMRs) as New Frontiers of Technological Divide

Small Modular Reactors (SMRs) have become a potential game changer on the global nuclear energy landscape. With their lower cost of construction and management, smaller footprint, and purported safety improvisations they are set to be the global carbon emission problem. While the western world is investing in the research and development of the SMRs to ensure the NSS standards of the SMRs, affordability, training and infrastructure, the global divide of PEANUTs is supposed to widen. To date, countries are being given subsidies and favored treatment in acquisition of SMRs which is replicating the intraperipheral differential treatment as in past. (Kazmi, 2025) Similarly, the persistent override of indigenization of technical expertise tends to aggravate the dependency and create the recipient states ‘dependent clients,’ rather than ‘independent operators’.

Among other potential hurdles that the latest PEANUTs, such as SMR, are likely to face is the highly centralized verification mechanisms. Regional verification regimes can integrate regional cultural dimensions and provide peer-based oversight. As Dr. Layton assesses that the decentralization of the verification regimes will build trust and horizontal cooperation. It will also help to address the grievances of the developing states pertaining to the bias of the global nuclear order with respect to the PEANUTs.

The need for the equitable and fair distribution of the PEANUTs is inevitable in the wake of the global climate crisis as well. The energy-poor regions of the world face issue in upgrading their energy infrastructure due to the shortage of finances, lack of expertise, discourse biases and politicized decisions. In the same vein, Frank Rose criticized climate discourse bias and called it ‘an ideological opposition to nuclear energy in climate policy circles. Dr. Layton highlighted the paradox of the developing states, where they are in the utmost need of ‘climate-resilient energy solutions’ as PEANUTs, but are least likely to receive international support. Regardless of the rhetoric of clean and sustainable energy solutions, nuclear order pertaining to the transfer of PEANUTs is governed more by geopolitics than the technical merit. And Rose bluntly observed it as, ‘it comes down to who you know.’

Atoms for All: A Path Towards a Sustainable Nuclear Energy Future

In today’s multipolar world, the developing states are grappling with the twin challenges. One of those challenges is the need for transformative solutions to nontraditional security challenges, and the second is navigating the exclusionary

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nuclear order (Hibbs, 2017). Despite that the nuclear energy offers a promising solution to the global energy challenges, pathways to its attainment are often surrounded with structural imbalance. Where selective states are given preferential access to the latest technologies, others are impeded by political embargoes. Therefore, the Global South urges for the reconfiguration of the contemporary nonproliferation regime where decisions are made on universally applied standards and not on strategic alignments. It expressed its frustration over the strategic selectivity of the current NPR. At their regional platforms as Non-Aligned Movements (NAM), (Futter & Olamide, 2016) Group of 77 (G77) (Gil, 2024), BRICS (XVI BRICS Summit Kazan Declaration, 2024), they were unified in their demand for equitable access to the PEANUTs.

Within this context, the Global South has to counter the narrative asymmetry along with the nuclear apartheid. These issues require the democratization of access to PEANUTs on the basis of the proven NSS records. The structural barriers posed by the global nuclear export control regimes can be replaced by the inclusive structures of South-South cooperation (Kazmi, 2025) of sharing PEANUTs, capacity building for NSS.

The push for indigenized capabilities and local expertise in PEANUTs is not only driven by the equitable access to PEANUTs, but demand for autonomy and status. Despite limited access to PEANUTs and geopolitical hurdles, countries in the Global South are presenting a parallel (Khan, 2025) model for ideal nuclear governance. A pertinent case study of the globally recognized success in an indigenized nuclear framework is Pakistan. The country embarked upon civil nuclear mission with the development of Pakistan Atomic energy Commission (PAEC), and installation of peaceful nuclear projects as PARR-1 in 1965 and Karachi Nuclear Power Plant (KANUPP-1). Technological limitations compelled Pakistan to indigenize nuclear fuel and technical expertise and lay the foundation of self-reliant nuclear infrastructure, which is internationally recognized. Pakistan adopted nuclear tracking mechanisms as 'cradle to death' besides the comprehensive physical protection system that aligns with the global best practices. All these achievements are not insular, as the country actively engages with global initiatives to enhance NSS. Pakistan developed some state-of-the-art NSS training institutions that not only raise a professional workforce but also host personnel from Global South countries. IAEA declared Pakistan its collaboration center due to the remarkable cultivation of domestic expertise in NSS. (Khan, 2025)

Provided the equitable and fair access to the PEANUTs, the Global South has the potential to effectively regulate PEANUTs in line with the global standards. The case study of Pakistan is a testament to this assertion. Despite facing unfairness in accessing in PEANUTs, geopolitical exclusion from the global nuclear governance, the country set an exemplary nuclear governance framework. The Pakistan Nuclear Regulatory Authority (PNRA) was created in 2001 consolidated prior regulatory framework and created a comprehensive enforcing authority over the entire nuclear fuel cycle of its entire nuclear infrastructure. The regulations and emergency coordination mechanisms of PNRA not only ensure compliance with the international best practices outlined by the IAEA but also contribute its expertise and knowledge into the global discourse. This transition from recipient to contributor, encompasses guidance to the other countries, hosting of IAEA emergency preparedness exercises and signing Country Programme

Frameworks (CPF) with IAEA. (Khan, 2025) The country gained rich nuclear experience without external patronage and under excessive pressure, which reflects that a developing state can develop a responsible system regulating the PEANUTs.

This precedent reinforces that the Global South is eligible for equitable reception of the PEANUTs. This remarkable experience can also serve as a parallel regulatory framework which is fairer and more inclusive. Not only this, it can also provide solution to the high cost of PEANUTs by providing cost-effective safety technologies.

Conclusion

Despite the global push for cooperation in the adoption of PEANUTs for sustainable solutions, their regulatory regime is marred by the legacies of colonialism. As discussed, the neocolonial architecture causes hindrance in the adoption of PEANUTs by the developing states. Through the monopoly over PEANUTs, Core states restrict nuclear autonomy of the periphery states and grant waivers to the intraperipheral states that align with their geopolitical agendas.

The quoted case studies of Pakistan and India manifest the politicization of the global nuclear order. The architecture is governed more by the strategic calculus than the compliance with the legal protocols. India is given preferential treatment and given nuclear technologies despite its nonadherence to the international NSS standards and structural deficiencies. Conversely, the globally recognized NSS infrastructure of Pakistan falls short of getting access to the PEANUTs due to the geopolitics.

Therefore, the study stresses upon restructure the PEANUTs governance system by moving past the rigid paradigms. Democratization of the PEANUTs transfer through inclusivity, transparency, and technical capabilities can be the testament to a fair and just global nuclear order. Modern PEANUTs as SMRs will simply widen the technopolarity if the current regime prevails. The Global South should be empowered with the tools, training, and autonomy to create its nuclear future. ‘Atoms’ cannot ensure peace until their usage as ‘Atoms for Control’ ceases. The path to sustainable global development has to detach from neocolonial logic and become ‘Atoms for All’.

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