

General Assembly 4: Special Political and Decolonization The Question of Deteriorating State of Nuclear Security

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Contents

Introduction	2
Definition of Key Terms	2
Background Information	3
Current Situation	4
Major Parties involved and their views	4
Timeline of Relevant Events	5
Related UN Treaties and Events	6
Previous Attempts to solve the issue	6
Possible Solutions	7
Suggested Reading	8
Bibliography	9

Introduction

The deteriorating state of nuclear security in today's world is a cause for growing concern and urgent attention. The quantity of nuclear materials and weapons, along with the rise of non-state entities vying for their purchase, have made the environment unstable and complicated. The illicit trafficking of nuclear materials or any breach in the security of nuclear installations presents a danger to international peace and security. Advances in technology and the dynamic nature of security threats have revealed weaknesses in the nuclear security framework throughout time. These threats must be addressed to stop the nuclear security situation from getting worse. This report from the fourth general assembly sheds light on the rapidly deteriorating condition of nuclear security by analyzing the major issues, patterns, and implications that necessitate prompt action from all of the committee's member states. This paper will also use this to show the circumstances that led to its decline. In addition, a review of the weaknesses and holes in the current frameworks will be conducted, including topics such as physical security, insider threats, cyber vulnerabilities, and the difficulties associated with international cooperation.

Definition of Key Terms

Nuclear Security

To focus on preventing, detecting, and responding to malicious activities involving nuclear material, radioactive chemicals, or the facilities that are connected to them, including theft, sabotage, unlawful transfer, unauthorized entry, and other similar incidents.

Nuclear Terrorism

The usage or threat to use radioactive substances, fuel, waste, or other nuclear compounds that can be poisonous, explosive, or otherwise harmful.

Nuclearization

The obtaining of nuclear weapons by or on behalf of a country or nation.

Cyberattacks

Threats or attacks via the internet that might disrupt nuclear planning or delivery systems, cause false alarms of the impending attack, stop important communications or information access, or even give an enemy control over a nuclear weapon.

Illicit Trafficking

Unauthorized removal, theft, selling, transfer, or transporting of radioactive or nuclear materials

Physical Protection Regime

A range of precautions against sabotage, theft, diversion, and other illicit conduct are taken in place to safeguard nuclear installations and equipment.

Background Information

Nuclear weapons development during the Manhattan Project in the 1940s is the origin of nuclear security history. During World War II (1939–1946), the Manhattan Project was a covert research project with the goal of creating atomic weapons. It concentrated on developing the atomic bombs "Fat Man" and "Little Boy," which were dropped on Hiroshima and Nagasaki, under the direction of scientists like Oppenheimer, Fermi, and Bohr. Several research locations were involved in the project, including Hanford, Oak Ridge, and Los Alamos. Its success marked a pivotal moment in nuclear security history, leading to the subsequent arms race and shaping the world's approach to nuclear weapons. Control and security issues with atomic weapons were raised by their employment in World War II. As a result of the 1945 use of atomic bombs on Hiroshima and Nagasaki, issues regarding the control and security of nuclear weapons were immediately raised. International efforts to stop the spread of nuclear weapons saw a major turning point with the signing of the Treaty on the Non-Proliferation of nuclear weapons (NPT) in 1970.

The US and Soviet Union were in a state of tension and rivalry from the end of World War II until the early 1990s, known as the Cold War. Economic, military, and political rivalry predominated, although there was no open hostilities. Nuclear security in the context of the Cold War also centered on the rivalry between the US and the USSR. Over time, security processes and procedures have evolved to safeguard nuclear weapons and supplies. However, several concerns, including proliferation, terrorism, insider threats, cybersecurity vulnerabilities, and ageing equipment, have contributed to the declining condition of nuclear security in recent years. International collaboration, nuclear facility modernization, improved physical and cybersecurity safeguards, and the encouragement of responsible nuclear stewardship are all necessary to meet these problems.

Current situation:

The safety and management of nuclear materials and infrastructure are facing an alarming trend of growing hazards and difficulties which the globe is experiencing. Tensions are raised and regional stability is threatened by the modernization of nuclear weapons by many nations, including North Korea's continuing nuclear program. Furthermore, the potential of cyberattacks that could jeopardize safety precautions is increased by the growing cybersecurity flaws in digital systems utilized in nuclear sites.

It is more urgent to improve nuclear security measures and international collaboration considering the ongoing threat of nuclear terrorism by non-state actors. Currently in Iran, the international deal known as the Joint Comprehensive Plan of Action (JCPOA) is designed to stop Iran from acquiring nuclear weapons. Concerns have been expressed regarding the future of nuclear security in the region, nevertheless, due to the United States' recent withdrawal from the deal and the difficulties that followed in putting it into practice. The complexity of the scenario is further increased by insider threats, the difficulties associated with decommissioning ageing nuclear sites, and the disposal of waste.

Major Parties involved and their views

United States of America

Federal regulations published by the Nuclear Regulatory Commission (NRC) oversee nuclear safety in the United States. All nuclear plants and materials in the US are governed by the NRC, except for those under government control and those used to power military vessels. It is home to a significant stockpile of nuclear weapons, and safeguarding these weapons from potential threats and illicit use is essential. Discussions concerning potential misuse or diversion of these resources have been sparked by worries expressed about US involvement in the transfer of nuclear technology or weapons for commercial gain. The US is, like other nuclear-weapon states, obligated to abide by international treaties and accords that support disarmament and work to stop the spread of nuclear weapons, it is crucial to remember this. These problems are addressed, and international nuclear security is promoted by initiatives like the Nuclear Non-Proliferation Treaty (NPT) and other arms control treaties.

Russia

Being an established nuclear state, Russia possesses a substantial nuclear arsenal, which sparks discussions and causes concerns about nuclear threats. International agreements recognize the nation's nuclear weapons stockpile, just like they do for other nuclear-weapon states. However, Russia, a significant nuclear power, has made clear that its government is determined to solve the deteriorating level of nuclear security. In order to stop the spread of nuclear weapons and materials, the Russian government places a strong emphasis on enhancing international cooperation and putting in place practical measures. It supports the advancement of disarmament initiatives, strong physical security for nuclear sites, and safe command and control systems. In order to strengthen nuclear security, Russia actively participates in international discussions and initiatives and collaborates closely with institutions like the International Atomic Energy Agency (IAEA).

China

China, as a significant nuclear power, possesses nuclear capabilities that raise discussions and considerations about nuclear threats. China's nuclear weapons are recognized by international organizations, much like those of other nuclear-weapon states. China upholds a minimal deterrence policy to fend off possible threats and protect its interests in national security. The Chinese leadership is aware that strong action is required to stop the spread of nuclear materials and weapons. To improve global nuclear security, it promotes strengthening international collaboration, arms control, and disarmament initiatives. China works with other nations to address shared concerns by actively participating in international forums and talks on nuclear security. It collaborates closely with organizations and promotes global initiatives like the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

DPRK

North Korea, also referred to as the Democratic People's Republic of Korea (DPRK), has raised concerns about its nuclear program and attracted attention from throughout the globe. The international community has criticized the DPRK for its aggressive actions and pursuit of nuclear weapons. In an attempt to reduce North Korea's nuclear ambitions, diplomatic diplomacy and sanctions have been used to handle the matter. The world community, which includes China, has demanded that the Korean Peninsula be denuclearized and that the nuclear issue be resolved peacefully via communication and cooperation.

The International Atomic Energy Agency

The IAEA bases its position on international conventions, guidelines, and recommendations regarding nuclear security. These include the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT), the Convention on the Physical Protection of Nuclear Material (CPPNM), and the Nuclear Security Series publications published by the IAEA.

In order to prevent theft, sabotage, illegal trafficking, and unauthorized access to nuclear facilities, materials, and technologies, the IAEA stresses the significance of upholding strong security measures. It pushes its member nations to put in place suitable safeguards against nuclear terrorism and to create and uphold strong nuclear security regimes.

To improve its member states' nuclear security capacities, the IAEA offers training, advice, and technical support. This entails carrying out security assessments, encouraging the establishment of national legislative frameworks, and supporting best practices in facilitating information sharing and international cooperation.

The Nuclear Non-Proliferation Treaty

The Nuclear Non-Proliferation Treaty (NPT) recognizes the importance of nuclear security alongside its primary objectives of non-proliferation and disarmament. The treaty places a strong emphasis on member states' obligations to uphold adequate physical security measures, regulate nuclear exports, and collaborate in sharing knowledge and resources to improve nuclear security. The NPT depends on the commitment and cooperation of its member nations and lacks direct enforcement tools, even if it has facilitated international cooperation and discourse on nuclear security. Therefore, in addition to the more general international activities and institutions linked to nuclear security, the NPT's effectiveness in addressing the current condition of nuclear security depends on states' combined efforts to execute and comply with its provisions.

Timeline of Relevant Events

Date	Description
August 6 - 9, 1945	<p>First Atomic Bombs Dropped on Hiroshima and Nagasaki</p> <p>An estimated 140,000 people were killed when the United States unleashed the first atomic bomb on Hiroshima, Japan, on August 6, 1945. Over 70,000 people died when the second atomic bomb was unleashed on Nagasaki by the United States on August 9. Later years saw a rise in the number of blast-related deaths as survivors experienced higher than average cancer rates associated with radiation exposure.</p>
July 29, 1957	<p>The Implementation of IAEA</p> <p>The International Atomic Energy Agency (IAEA) was established in 1957 to promote and oversee the peaceful use of nuclear weaponry.</p>
1968-1975	<p>The Establishment of The NPT</p> <p>Global nuclear nonproliferation saw both advancements and setbacks in the late 1960s and early 1970s. On one hand, the Nuclear Nonproliferation Treaty (NPT) signed by the United Nations established the first framework on nuclear weapons.</p>
Feb 14th, 1967	<p>The Establishment of The First Nuclear-Weapon Free Zone</p> <p>February 14 marked the opening of signatures for the Treaty of Tlatelolco, which made Latin America the first region to be designated as a nuclear-weapon-free zone (NWFZ). Under this agreement, nations pledged to "prohibit and prevent" the use, testing, manufacture, production, or acquisition of nuclear weapons.</p>

<p>June 12, 1968</p>	<p>First International Treaty to Prevent Spread of Nuclear Weapons Is Signed Following the adoption of a resolution by the UN General Assembly in June 1968, nations started signing the Treaty on the Nonproliferation of nuclear weapons.</p>
<p>1986-2000</p>	<p>End of the Cold War Improves Nuclear Security After the Cold War, significant effort was made to fortify the Nuclear Nonproliferation Treaty, persuade former Soviet nations to ratify it, and put an end to the continued use of nuclear weapons following the fall of the Soviet Union in 1991 and the end of the Cold War.</p>
<p>July 15, 2015</p>	<p>World Powers Reach a Nuclear Agreement With Iran U.S. officials said in 2002 that Iran had started working on a nuclear weapons program. U.S. experts released satellite images of what they believed to be a huge heavy water facility and a uranium enrichment plant, two facilities essential to the creation of nuclear weapons.</p>
<p>July 7, 2017</p>	<p>The United Nations Adopts Nuclear Weapons Ban Treaty The Treaty on the Prohibition of nuclear weapons, the first legally enforceable agreement for nuclear disarmament in two decades, was ratified by 122 nations at the UN.</p>

Related UN Treaties and Events

- The International Atomic Energy Agency (IAEA) has the mission of promoting and overseeing the peaceful use of nuclear weapons.
- The Nuclear Nonproliferation Treaty (NPT) is a global treaty that has the three goals of non-proliferation, disarmament, and peaceful uses of nuclear energy.
- The Strategic Arms Limitation Talks Agreement, which was signed on May 26, 1972, is commonly referred to as SALT I. SALT I allowed for the installation of additional submarine-launched ballistic missile launchers while freezing the number of strategic ballistic missile launchers at current levels.

- A global agreement known as the Comprehensive Nuclear-Test-Ban Treaty (CTBT) forbids the testing of nuclear weapons and any other type of nuclear explosion for military or civilian use in any setting.
- The first formal international agreement to completely forbid nuclear weapons with the ultimate goal of their abolition is the Treaty on the Prohibition of Nuclear Weapons (TPNW), sometimes known as the Nuclear Weapon Ban Treaty.

Previous Attempts to solve the issue

Numerous approaches have been used to address the problem of nuclear security, including the drafting and enactment of international accords. The Comprehensive Nuclear Test-Ban Treaty (CTBT) and the Non-Proliferation Treaty (NPT) are two notable instances of agreements that have aimed to advance disarmament and stop the spread of nuclear weapons. These proposals create a foundation for international collaboration, promoting communication, and information exchange about nuclear security. Furthermore, other collaborations to promote international collaboration and combat the illicit trafficking of nuclear materials, initiatives like the Global Initiative to Combat Nuclear Terrorism (GICNT) and the Proliferation Security Initiative (PSI) have been developed. These programs help member countries work together, share intelligence, and develop their capacities in order to improve their capacity to identify, stop, and deter the smuggling of nuclear materials.

Additionally, programs such as the Nuclear Security Summits, which took place from 2010–2016, brought international leaders together to discuss issues related to nuclear security and encourage the implementation of more robust security measures. These summits sought to improve collaboration, reinforce nuclear security standards, and promote a global nuclear security culture through talks, pledges, and action plans. The international community's dedication to tackling the intricate and dynamic problem of nuclear security through cooperation, agreements, and the exchange of best practices is reflected in these joint stakeholders.

Possible Solutions

The field of nuclear security is being tackled through a variety of all-encompassing approaches that are designed to reduce dangers, improve security, and foster global collaboration. Sturdy mechanisms are in place to prevent unwanted access to nuclear materials and installations, and one important strategy is the ongoing improvement of nuclear security standards and best practices.

There are constant discussions and agreements aiming at advancing nuclear non-proliferation and disarmament, building international confidence, and lowering the total number of nuclear weapons in the world. Strict export regulations, which include the creation of extensive frameworks and regulatory systems to oversee and manage the transfer of sensitive nuclear technology, could be put in place to stop the illegal trafficking of nuclear technology.

Cybersecurity safeguards are also being strengthened to safeguard digital systems and vital infrastructure connected to nuclear reactors in light of the increased threat posed by cyberattacks. To protect against such intrusions, these efforts include sophisticated technologies, secure network structures, and ongoing monitoring. Furthermore, information sharing, capacity building, and the sharing of best practices among countries are made possible by international cooperation and collaboration through institutions like the International Atomic Energy Agency (IAEA). Member states must seek to respect the ideals of safe and peaceful use of nuclear technology, reduce the dangers related to nuclear materials and facilities, and enhance nuclear security globally by utilizing these many interrelated tactics.

Suggested Reading

- <https://world101.cfr.org/global-era-issues/nuclear-proliferation/history-nuclear-proliferation>

This reading offers an in-depth overview of the major occasions and advancements in the spread of nuclear weapons throughout the history of nuclear proliferation.

- <https://www.iaea.org/newscenter/focus/dprk/fact-sheet-on-dprk-nuclear-safeguards>

The fact sheet specifically focuses on nuclear safeguards related to the Democratic People's Republic of Korea (DPRK), providing essential information on the measures and protocols in place to ensure the safe and secure use of nuclear materials in North Korea.

- <https://www.icanw.org/russia>

The source provides information about Russia's engagement in and position on the Treaty on the Prohibition of Nuclear Weapons, as well as its views on nuclear non-proliferation and disarmament initiatives.

- https://en.wikipedia.org/wiki/Nuclear_safety_and_security

This Wikipedia article offers a comprehensive analysis of nuclear safety and security, addressing issues like laws, global collaboration, emergency planning, and the several steps used to stop mishaps and illegal access to nuclear materials.

- https://en.wikipedia.org/wiki/Nuclear_Regulatory_Commission

The Nuclear Regulatory Commission (NRC), an independent US organization in charge of nuclear energy regulation, is covered in detail in the Wikipedia article above. It provides details on the history, organizational structure, and duties of the NRC in relation to nuclear energy security, safety, and public health.

- https://en.wikipedia.org/wiki/Nuclear_energy_policy_by_country

An overview of the nuclear energy strategies that are being pursued by many nations worldwide may be found on this Wikipedia page. It provides information on nuclear phase-outs, expansions, and international agreements, as well as insights into the policies, rules, and tactics used by different countries to generate nuclear power.

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