

BIGMUN 2025

GA6: Legal

Research Report

Topic 1: Improving the legal frameworks concerning safety and security of nuclear power plants during conflicts



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Introduction

The frameworks concerning nuclear power plants has always been a factor of unsettlement between nations, which has further provoked the undermining of international trust and peace. This issue is further enhanced when nations are involved in conflicts, since the power of having nuclear power plants can easily be taken advantage of if there are not enough regulations regarding its safety and security. about 32 confirmed countries around the world are in possession of nuclear power plants and use them for generating energy, however, nuclear power is currently a global issue for it can be used unethically and dangerously in case of international conflict.¹

Therefore, this research report will further explain the problem of the first topic, mention the countries involved and briefly explain the previous resolutions and attempts to solve the matters of this issue.

¹ ICAN. "Countries with nuclear weapons - ICAN." *International Campaign to Abolish Nuclear Weapons*, https://www.icanw.org/nuclear_arsenals

Definition of key terms

Proliferation – proliferation means rapid increase in quantity, in this case, it is regarding nuclear armament.

NPT – non-proliferation of nuclear weapons: The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is the centrepiece of global efforts to prevent the spread of nuclear weapons, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of nuclear disarmament and general and complete disarmament. (IAEA)²

TPNW – Treaty on the prohibition of nuclear weapons (TPNW), which includes a set of restrictions on participating in any nuclear weapon activities. (UNODA)³

Background information

Nuclear power is a method of generating energy by using the heat and radiation produced from nuclear fission (splitting atoms), typically from uranium or plutonium atoms. Nuclear power has had a significant impact on production of energy, as well as international matters and weaponry.

The discovery of nuclear fission in 1938 laid the foundation for nuclear power and its many uses. During World War II, nuclear energy was primarily developed for weaponry, leading to the first use of atomic bombs in 1945. After the war, attention shifted to peaceful applications. Nuclear power is a key player in combating climate change. Unlike fossil fuels, it generates electricity without emitting greenhouse gases.⁴

There are many advantages to Nuclear energy, such as providing a high output relative to the amount of fuel used, making it an efficient energy source, as well as being a consistent source of energy independent from weather conditions and such.

However, there are disadvantages to nuclear power, some even life-threatening; these disadvantages have always raised concerns about this matter. Some known examples would be the disastrous events of Chernobyl (1986), Fukushima (2011), and Three Mile Island (1979). The effects of nuclear power are quite lethal. Spent nuclear fuel remains radioactive for thousands of years and finding long-term storage solutions is a significant challenge to societies. Furthermore, the technology and materials used for nuclear power can be diverted to create nuclear weapons, raising international security concerns.⁴

² IAEA. “Treaty on the Non-Proliferation of Nuclear Weapons (NPT) | IAEA.” *International Atomic Energy Agency*, <https://www.iaea.org/topics/non-proliferation-treaty>

³ UNODA. “Treaty on the Prohibition of Nuclear Weapons – UNODA.” *United Nations Office for Disarmament Affairs*, <https://disarmament.unoda.org/wmd/nuclear/tpnw/>

⁴ UN. “Atomic Energy | United Nations.” *the United Nations*, <https://www.un.org/en/global-issues/atomic-energy>

Modern nuclear power plants are equipped with numerous safety measures, including cooling systems, containment buildings, and automated shutdown mechanisms. International organizations like the IAEA promote safety standards and inspect the processes regarding this sensitive matter. Security is still a concern, particularly in regions prone to conflict.

One of the challenges faced today by societies and governments is the hesitation towards adopting nuclear power as a main supply for energy. While it is more efficient and consistent, the waste and cost of it pose challenges. Furthermore, Countries such as Iran and North Korea spark debate over the line between nuclear energy development and weaponization.

Major countries and organizations involved

The International Atomic Energy Agency (IAEA) – The IAEA is the world's centre for cooperation in the nuclear field and seeks to promote the safe, secure and peaceful use of nuclear technologies. (IAEA)

National Nuclear Security Administration – One of NNSA's core missions is to ensure the United States maintains a secure nuclear stockpile through different applications of sciences. (NNSA)

United Nations Office for Disarmament Affairs (UNODA) – UNODA provides substantive and organizational support for norm-setting in the area of disarmament and fosters disarmament measures through dialogue, transparency and confidence-building on military matters. (UNODA)

Convention of nuclear safety (CNS) – The Convention on Nuclear Safety (CNS) aims to commit Contracting Parties operating land-based civil nuclear power plants to maintain an important level of safety by establishing fundamental safety principles to which States would subscribe. (IAEA)

Islamic republic of Iran – Iran is facing Increased rate of highly enriched uranium (HEU) production (April 10, 2024). (NTI)⁵

Israel – Israel has been believed to possess nuclear power in large scales since the 1960's, however this information is neither confirmed nor denied, Israel is also not a signatory of the NPT. (NTI)⁶

⁵ ICAN. "Countries with nuclear weapons - ICAN." *International Campaign to Abolish Nuclear Weapons*, https://www.icanw.org/nuclear_arsenals

⁶ NTI. "Israel." *The Nuclear Threat Initiative*, 3 July 2024, <https://www.nti.org/countries/israel/>

Russia – Russia has significant nuclear power capabilities (most weapons confirmed among others) and works on international agreements to secure nuclear materials and manage its large stockpiles of nuclear weapons and reactors. (ICAN)

France – France heavily relies on nuclear power plants to provide electricity and is extremely cautious about its nuclear safety and waste management.

United States – the US is a leader in nuclear security through organisations like NNSA, with a focus on maintaining nuclear security and preventing nuclear terrorism, the US is also the second biggest nuclear weapon holder after Russia.

China – China is a growing nuclear power producer and is facing rapid nuclear expansion.

India – Nuclear power is considered a big part of the Indian infrastructure development programme; therefore, the government is highly committed to its nuclear expansion.

North Korea – North Korea has an active nuclear power program and withdrew from the NPT in 2003. (Columbia University)⁷

Relevant UN resolutions

1. *Conference of the United Nations Security Council to prevent the proliferation of nuclear, chemical, and biological weapons, particularly to non-state actors. (2004)* (UN)⁸

(only some more relevant clauses are mentioned)

“2. **Decides** also that all States, in accordance with their national procedures, shall adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them;

⁷ Columbia University. “North Korea's Nuclear Program: A History | Korean Legal Studies.” *Korean Legal Studies*, <https://kls.law.columbia.edu/content/north-koreas-nuclear-program-history>

⁸ UNODA. “Treaty on the Prohibition of Nuclear Weapons – UNODA.” *United Nations Office for Disarmament Affairs*, <https://disarmament.unoda.org/wmd/nuclear/tpnw/>

3. Decides also that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery, including by establishing appropriate controls over related materials and to this end shall:

(a) Develop and maintain appropriate effective measures to account for and secure such items in production, use, storage or transport;

(d) Establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items, including appropriate laws and regulations to control export, transit, trans-shipment and re-export and controls on providing funds and services related to such export and trans-shipment such as financing, and transporting that would contribute to proliferation, as well as establishing end-user controls; and establishing and enforcing appropriate criminal or civil penalties for violations of such export control laws and regulations;

9. Calls upon all States to promote dialogue and cooperation on non-proliferation so as to address the threat posed by proliferation of nuclear, chemical, or biological weapons, and their means of delivery;”

(there are 8 reaffirmations of this resolution up until November 2022)

2. *[Conference of the United Nations General Assembly regarding the Safety and security of nuclear facilities of Ukraine, including the Zaporizhzhia nuclear power plant. \(2024\)](#)*
*[\(UN\)](#)*⁹

(only some more relevant clauses are mentioned)

“Recalling its relevant resolutions adopted at its eleventh emergency special session² as well as its resolutions 68/262 of 27 March 2014, 78/8 of 8 November 2023 and 78/221 of 19 December 2023,

4. Condemns the failure of the Russian Federation to implement relevant resolutions of the General Assembly and the General Conference and the Board of Governors of the International Atomic Energy Agency;

⁹ UN. “Atomic Energy | United Nations.” *the United Nations*, <https://www.un.org/en/global-issues/atomic-energy>

6. Welcomes and encourages the continued efforts of the Director General of the International Atomic Energy Agency to address the risks to nuclear safety and security, as well as to safeguards implementation at the Zaporizhzhia nuclear power plant, caused by the aggression by the Russian Federation against Ukraine, including through the continued and reinforced physical presence of the International Atomic Energy Agency Support and Assistance Mission to Zaporizhzhia;

7. Calls upon the Russian Federation, until it returns the Zaporizhzhia nuclear power plant of Ukraine to the full control of the sovereign and competent authorities of Ukraine, to provide the International Atomic Energy Agency Support and Assistance Mission to Zaporizhzhia with timely and full access to all areas at the plant that are important for nuclear safety and security in order to allow the Agency to report fully on the nuclear safety and security situation at the site;

9. Also calls upon all parties to the armed conflict to implement fully the “seven indispensable pillars for ensuring nuclear safety and security during an armed conflict” and the five concrete principles of the Director General of the International Atomic Energy Agency to help to ensure nuclear safety and security at the Zaporizhzhia nuclear power plant;

11. Calls upon Member States to continue to support the efforts of the Director General of the International Atomic Energy Agency to uphold nuclear safety, security, and safeguards implementation at all nuclear facilities in Ukraine;”

Previous attempts to solve the issue

Treaty of Tlatelolco – Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (UN)

- Adopted in 1967 in Mexico City, to prevent the harms that can be caused by nuclear arms and to settle the matter of military denuclearization in Latin America.¹⁰

Treaty of Rarotonga –South Pacific Nuclear Free Zone Treaty (UN)

- Adopted in 1985 in Rarotonga, concerned with the radioactive pollution of water and land and attempting to prevent any nuclear-related activities in the area.¹¹

¹⁰ UN. “United Nations Platform for Nuclear-Weapon-Free-Zones | United Nations”

<https://www.un.org/nwzf/content/treaty-tlatelolco>

¹¹ UN. “Nation Unies | United Nations” <https://www.un.org/nwzf/fr/content/treaty-rarotonga>

Treaty of Bangkok –Treaty on the Southeast Asia nuclear weapon-Free Zone (UN)

- Adopted in 1995 in Bangkok, determined to protect the region from environmental pollution and attempting to wholly prevent states from undertaking manufacturing or possession of any nuclear power, even in peaceful manners. ¹²

Treaty of Pelindaba –African Nuclear-Weapon-Free Zone Treaty (UN)

- Adopted in 1995 in Addis Ababa, noting the importance of global contribution to a nuclear-free world and emphasizing on the prevention of conducting any research or exchange of information on this matter. ¹³

Possible solutions

Stronger application of the Treaty of Prohibition on Nuclear Weapons (TPNW):

Recognizing nations against the TPNW and appealing to them, compromising or laying embargos based on the response, in order to ban nuclear weapons in more countries, particularly developing nations and nations prone to conflict.

Sturdier peace agreements: Forming new and stronger peace treaties among nations can ensure more safety and less tension regarding nuclear weapons, and while this solution does not solve the issue from its bane, it is still strongly efficient to prevent wars in order to stop the use of nuclear weapons temporarily and further allowing nations to get to better solutions in the meantime, while averting the damaging effects on the environment and people.

Consistent inspection: Continuous investigations regarding countries that hold nuclear power, conducted by the UN, might ease the process of keeping track and maintaining safety and security regarding nuclear weapons and proliferation and Highly Enriched Uranium (HEU).

¹² UN. “Nation Unies | United Nations”

¹³ UN. “United Nations Platform for Nuclear-Weapon-Free-Zones | United Nations”
<https://www.un.org/nwfp/content/treaty-pelindaba>

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