Forum: General Assembly Fourth Committee – Special Political and Decolonization
Question of: Countering the Russian Control over Ukrainian Nuclear Power Plants
Student Officer: Zohre Bayat
Position: Main Chair
Contact: zohre.bayat@gym-meiendorf.de

Dear delegates, welcome to the Fourth Committee of MUNoH. This research report is designed to introduce you to the question of Russian control over Ukrainian nuclear power plants and to give you the tools you need to research further, form a position, and prepare working documents. Please read this report carefully, take notes, and follow up with your own research using the sources and links provided at the end of this report. If you have any questions, do not hesitate to contact your Student Officer.

I. Description of the Issue

Since the Russian Federation launched its full-scale invasion of Ukraine on 24 February 2022, the war has directly threatened the safety of one of the largest civil nuclear power infrastructures in the world. Ukraine operates fifteen nuclear reactors at four active nuclear power plants, Zaporizhzhia, South Ukraine, Khmelnytskyi, and Rivne – which together, before the war, supplied roughly half of the country's electricity. In addition, the site of the 1986 Chornobyl accident, though no longer producing power, still holds vast quantities of radioactive material and requires constant monitoring and cooling.

For the first time in history, an armed conflict has taken place in and around the facilities of a major nuclear power programme. In the early hours of 4 March 2022, the Zaporizhzhia Nuclear Power Plant (ZNPP), Europe's largest nuclear power plant, with six reactors, became the first operating civil nuclear facility ever to come under direct armed attack. Russian forces seized control of the plant that same day and have occupied it ever since, while it continues to be operated, under great strain, largely by its original Ukrainian technical staff. The Chornobyl site was also seized by Russian forces on 24 February 2022, though control was returned to Ukrainian personnel on 31 March 2022 after Russian troops withdrew from the area.

Score of the issue for this committee is twofold. First, there is the physical and operational safety of the plants themselves: repeated shelling, drone strikes, and the loss of off-site electricity supply have repeatedly threatened the cooling systems that prevent a meltdown, forcing plants onto emergency diesel generators on numerous occasions. Second, there is the question of legal and political control: Russia's continued military occupation of the ZNPP, its 2022 attempt to formally annex the plant under Russian jurisdiction, and its installation of Rosatom personnel in operational roles raise fundamental questions of international law, nuclear governance, and sovereignty that this committee must grapple with. Both dimensions safety and sovereignty are deeply intertwined, and any resolution to this issue must address them together.

Although the war affects many aspects of international security, the Fourth Committee's mandate is particularly suited to the political, legal, and disarmament-adjacent dimensions of this question: how the international community can help de-escalate the military risk around nuclear installations, uphold international humanitarian law, and support the International Atomic Energy Agency (IAEA) in its mission to prevent a nuclear accident, without the committee overstepping into matters reserved for the Security Council.

II. Definition of Key Terms

Nuclear Power Plant (NPP)

A facility that generates electricity by using controlled nuclear fission reactions to produce heat, which is then used to create steam that drives turbines. Ukraine's four active NPPs use pressurised water reactors of the Russian-designed VVER type.

Off-site Power / External Power Supply

Electricity supplied to a nuclear plant from the national grid via high-voltage transmission lines. Off-site power is essential to run the pumps and systems that cool the reactor core and spent fuel, even when the reactor itself is shut down. The repeated loss of off-site power at Zaporizhzhia has been one of the central safety concerns of the war.

Cold Shutdown / Hot Shutdown

Operating states of a nuclear reactor in which the nuclear chain reaction has been stopped. In cold shutdown, the reactor coolant is kept below the boiling point; in hot shutdown, some heat and steam continue to be generated, for example to provide district heating. Since 2022,

most of the ZNPP's reactors have been kept in a shutdown state rather than producing electricity.

Emergency Diesel Generator (EDG)

A back-up power source at a nuclear plant that automatically activates if all off-site electricity is lost, providing the minimum power needed to keep cooling systems running and avoid a meltdown. At Zaporizhzhia, EDGs have had to be activated dozens of times since 2022 whenever external power lines were cut by shelling.

Nuclear Safety and Security Protection Zone

A concept proposed by the IAEA to create a demilitarised area around a nuclear facility, in which military activity, weapons, and personnel that could threaten the plant would be prohibited. The IAEA has repeatedly called for such a zone around Zaporizhzhia, though it has not been formally implemented.

Energoatom

Ukraine's state-owned national nuclear energy generating company, which operated all of the country's nuclear plants before the war and continues to operate South Ukraine, Khmelnytskyi, Rivne, and Zaporizhzhia, although Russian forces have installed a parallel operating structure at the occupied plant.

Rosatom

The Russian State Atomic Energy Corporation, a state-owned enterprise that oversees the Russian civilian nuclear industry. Rosatom has installed technical and administrative staff at the occupied Zaporizhzhia plant since 2022, a development the IAEA has said risks interfering with normal operational command.

IAEA (International Atomic Energy Agency)

The United Nations' specialised agency for nuclear cooperation, founded in 1957, based in Vienna. The IAEA promotes the peaceful use of nuclear energy while working to prevent its use for military purposes, and monitors compliance with nuclear safeguards agreements. Since September 2022 the IAEA has maintained a continuous staff presence at all of Ukraine's nuclear sites to monitor safety conditions.

Seven Indispensable Pillars

A framework developed by the IAEA in March 2022 to assess nuclear safety and security during the conflict, covering issues such as the physical integrity of facilities, the functioning of safety and security systems, staff conditions, and the ability to transmit safety data to the IAEA.

Five Concrete Principles

A set of principles outlined by IAEA Director General Rafael Mariano Grossi to the UN Security Council on 30 May 2023, intended to safeguard the ZNPP, including that there should be no attacks from or against the plant and that the plant should not be used to store heavy weapons.

III. Background information

Ukraine's nuclear power sector was built during the Soviet era and remains one of the largest in Europe. Before the full-scale invasion, Ukraine's nuclear plants generated approximately half of the country's electricity, making them critical to the nation's energy security. All fifteen reactors are Russian-designed VVER pressurised-water reactors, a shared technical legacy that has become politically significant during the war, as Russia has argued this connection supports its claims to a role in operating the plants.

Since Russia's invasion began, the operational status of Ukraine's reactors has fluctuated constantly, with units brought online or shut down depending on the security situation and the stability of external power supplies. The war has repeatedly disrupted Ukraine's national electricity grid through missile and drone strikes on substations and transmission infrastructure, at times forcing nuclear plants to automatically disconnect due to frequency instability across the whole network, and causing wider blackouts as far as neighbouring Moldova.

The Zaporizhzhia Nuclear Power Plant has been the focal point of international concern. Located in the city of Enerhodar in south-eastern Ukraine, near the front line, it has been under Russian military occupation since 4 March 2022, while continuing to be run day-to-day largely by Ukrainian technical staff working under Russian military command. The plant has repeatedly lost connection to some or all of its off-site power lines because of shelling, forcing it to rely on emergency diesel generators a situation the IAEA has warned could lead to a severe nuclear accident if repeated too often or for too long. In October 2025, the plant

went a full month without any off-site power at all, the longest such outage of the war, before repairs were carried out during a local ceasefire.

Cooling water supply has also been a persistent concern. The destruction of the Nova Kakhovka dam in June 2023 drained the reservoir that had served as the plant's ultimate source of cooling water, forcing Ukrainian engineers to drill a network of groundwater wells as an alternative long-term water source. The plant's large on-site cooling pond and these wells have so far proven sufficient, but the loss of the reservoir removed an important safety margin.

In October 2022, Russian President Vladimir Putin issued a decree purporting to transfer ownership and operational control of the ZNPP to a newly created Russian entity, a move Ukraine and most of the international community dismissed as null and void under international law. Since then, Rosatom has steadily increased its administrative and technical presence at the plant, and Ukrainian staff who refuse to sign contracts with the Russian operator have in many cases been barred from the site, sharply reducing the number of licensed personnel available to run it safely.

Historical background

Ukraine's relationship with nuclear power is shaped profoundly by the 1986 Chornobyl disaster, still the worst civil nuclear accident in history. A flawed Soviet reactor design combined with operator error caused an explosion and fire at Chornobyl's Unit 4 reactor, releasing large quantities of radioactive material across Ukraine, Belarus, and much of Europe. The accident led to the evacuation of the surrounding area, still maintained today as an exclusion zone, and to the eventual construction of the New Safe Confinement (NSC), a large steel arch completed in 2016 to contain the damaged reactor. In February 2025, a Russian drone struck the NSC, breaching both its outer and inner cladding, the most serious single incident affecting Chornobyl since the war began, though radiation levels were reported to remain stable.

This historical memory of Chornobyl adds particular weight to international anxiety about the safety of Ukraine's active reactors during the current war: unlike Chornobyl in 1986, today's crisis unfolds amid active combat, artillery exchanges, and drone warfare in immediate proximity to operating nuclear installations, a scenario without precedent in the history of civil nuclear power.

IV. Major Countries and Organizations Involved

Ukraine

As the state whose sovereignty and nuclear infrastructure are directly affected, Ukraine considers the occupation of the ZNPP illegal under international law and has consistently called for the plant's return to full Ukrainian control. Ukraine, through Energoatom and its nuclear regulator, the State Nuclear Regulatory Inspectorate (SNRIU), continues to assert legal authority over all its nuclear facilities, including those under Russian occupation.

Russian Federation

Russia has occupied the ZNPP since March 2022 and, through its state nuclear corporation Rosatom, has progressively taken over operational and administrative functions at the plant. Russia maintains that its presence is necessary to guarantee the plant's safety and has proposed reconnecting it to the Russian electricity grid, a move Ukraine and Western states strongly oppose.

International Atomic Energy Agency (IAEA)

As the central technical authority on nuclear safety, the IAEA has played the most consistent and visible role throughout the crisis, maintaining a permanent monitoring presence at all of Ukraine's nuclear sites since 2023, publishing regular situation reports, and mediating between Russia and Ukraine on issues such as staff rotations and repair work. IAEA Director General Rafael Mariano Grossi has personally travelled to Ukraine and Russia multiple times to negotiate access and safety arrangements.

United States and European Union member states

Western states have broadly supported Ukraine's position, condemned Russia's occupation of the ZNPP as a violation of international law and nuclear safety norms, and provided technical, financial and diplomatic support to the IAEA's mission in Ukraine. Several EU states have also worked to diversify their own nuclear fuel supply chains away from Russia.

Belarus

As a close ally of Russia bordering both Ukraine and the Chornobyl exclusion zone, Belarus was used as a staging area for Russian forces during the initial occupation of Chornobyl in 2022, giving it an indirect but notable role in the early stages of the crisis.

Energoatom and Rosatom

These are the two national nuclear operators at the centre of the dispute over who has legitimate authority to run Ukraine's nuclear plants: Ukraine's state operator Energoatom, and Russia's state nuclear corporation Rosatom, which has installed a parallel operating structure at the occupied ZNPP.

V.Timeline of events

- 24 February 2022 →Russia launches its full-scale invasion of Ukraine; Russian forces seize control of the Chornobyl nuclear power plant site on the same day.
- 4 March 2022 → Russian forces attack and seize the Zaporizhzhia Nuclear Power Plant after fighting damages a training building on site; it becomes the first operating civil nuclear plant in history to come under armed attack.
- 31 March 2022 → Russian forces withdraw from the Chornobyl site, returning control to Ukrainian personnel.
- January 2023 →The IAEA establishes a permanent staff presence at all of Ukraine's operating nuclear power plants.
- 5 October 2022 → Russian President Vladimir Putin signs a decree purporting to place the ZNPP under Russian federal ownership; Ukraine declares the decree null and void.
- 30 May 2023 →IAEA Director General Rafael Mariano Grossi presents the 'Five Concrete Principles' for protecting the ZNPP to the UN Security Council.
- 6 June 2023 → The Nova Kakhovka dam is destroyed, draining the reservoir that had supplied cooling water to the ZNPP; Ukrainian engineers begin drilling groundwater wells as an alternative water source.
- 2023-2024 → Repeated cycles of shelling, drone strikes, and loss of off-site power lines affect the ZNPP and other Ukrainian nuclear facilities; the IAEA repeatedly calls for a protective zone around the plant.
- 14 February 2025 → A drone strikes the New Safe Confinement structure at Chornobyl, breaching its outer and inner cladding.
- 23 September - 23 October 2025 → The ZNPP experiences a month-long, complete loss of off-site power, the longest outage of the war, before repairs restore the connection during a local ceasefire.

- 27 April 2026 → A worker at the ZNPP is killed in a drone strike, the first confirmed fatality at the plant since the war began.
- 2026 (ongoing) → The ZNPP continues to experience repeated, short-term losses of its remaining off-site power lines, while Rosatom continues to expand its administrative role at the site, including placing plant IT systems under a Rosatom subsidiary in March 2026.

VI. Previous attempts to solve the issue

The primary international mechanism addressing this crisis has been the work of the IAEA, which has pursued a strategy of continuous monitoring, technical assistance, and quiet diplomacy rather than binding enforcement, reflecting the limits of its mandate as a technical rather than political body. The Agency's Seven Indispensable Pillars framework, developed in March 2022, gave the international community a structured way to track safety conditions at Ukrainian sites, while the Five Concrete Principles announced in 2023 set out specific behavioural red lines intended to prevent an attack on or from the ZNPP.

Despite extensive shuttle diplomacy by IAEA Director General Grossi, including direct talks with both Russian and Ukrainian officials and with Rosatom's leadership, the proposed 'nuclear safety and security protection zone' around the ZNPP has never been formally implemented, and both sides continue to accuse the other of violating agreed principles. Temporary local ceasefires have occasionally allowed urgent repair work, such as the restoration of power lines in October 2025, but these arrangements have been ad hoc and have not evolved into a lasting framework.

At the political level, the UN General Assembly and Security Council have addressed the broader war repeatedly, and the Assembly has passed resolutions condemning violations of Ukrainian sovereignty, though none has specifically and bindingly resolved the status of the occupied nuclear plant. Western governments have imposed sanctions targeting Russia's nuclear-adjacent trade, including the 2024 United States legislation banning imports of Russian enriched uranium, partly in response to the broader war, and have supported Ukraine and the IAEA with funding, equipment and diplomatic backing. European utilities operating Russian-designed reactors have also worked to diversify their nuclear fuel supply away from Russian sources, reducing the West's reliance on the very industry now controlling the ZNPP.

VII. Possible solutions

Delegates should consider that any credible solution to this issue must balance immediate physical safety with the deeper legal and political dispute over sovereignty and control. Purely technical fixes, without addressing who controls the plant, are unlikely to remove the underlying risk; purely political declarations, without practical safety guarantees, are unlikely to be respected on the ground.

One avenue worth exploring is strengthening and formalising the proposed nuclear safety and security protection zone around the ZNPP, potentially with an expanded, more clearly mandated IAEA monitoring presence and agreed consequences for violations, to give the framework more practical weight than it has had so far.

A second avenue concerns the resilience of off-site power supply, since the vast majority of safety incidents at the ZNPP have stemmed from the loss of external electricity rather than direct reactor damage. Delegates could consider proposals to internationally fund or support the repair and hardening of transmission infrastructure, as well as the expansion of independent back-up power and cooling capacity, to reduce reliance on emergency diesel generators during periods of active conflict.

A third avenue concerns questions of legitimacy and staffing: the international community could explore mechanisms to support the return of licensed Ukrainian operating staff to the site, or to clarify, through IAEA-facilitated dialogue, the operational chain of command in a way that reduces the risk of unsafe decisions being made for political rather than technical reasons.

Finally, delegates should consider the longer-term question of how the plant's status will ultimately be resolved once the wider war ends, and what role the United Nations, the IAEA, and impartial international oversight could play in returning the facility to a stable and internationally recognised operating framework. Solutions proposed in committee should be realistic, specific, and grounded in the IAEA's existing technical frameworks rather than purely aspirational statements.

VIII. How to prepare as a delegate

As you prepare for the conference, research your assigned country's specific relationship to this issue:

- Is your country a nuclear power itself?
- Does it operate Russian-designed reactors and rely on Russian nuclear fuel?
- Has it taken a public position on the occupation of the ZNPP, for example through statements at the UN, sanctions, or support for the IAEA's mission?
- Is your country a member of the IAEA Board of Governors?

Understanding these details will allow you to represent your country's interests accurately and to identify potential allies and opponents in committee.

You should also familiarise yourself with the technical vocabulary explained in Section II, as well as with the IAEA's Seven Indispensable Pillars and Five Concrete Principles, since these frameworks are likely to form the basis of much of the debate and of any resolution drafted in committee.

All delegates are obligated to write at least one draft resolution and a minimum of two, preferably three, position papers, so that all topics of the forum are fully covered. The deadline for delegates to send in their research-related documents, including position papers, is 27 August 2026 (27.08.2026). After this deadline, documents will no longer be corrected by the Student Officers, and documents submitted later than the deadline will not be considered when it comes to awards, since the Student Officers need to see how much preparation each delegate has put into their research ahead of the conference. As Student Officers, we will decide on the best and most distinguished delegate, as well as the best first-timer, in this committee.

IX. Relevant UN Treaties and events

Delegates should be aware of the following legal instruments and events, which form important background for debate on this issue:

- The Treaty on the Non-Proliferation of Nuclear Weapons (NPT, 1968), the cornerstone treaty governing the peaceful use of nuclear energy and the prevention of the spread of nuclear weapons, under which the IAEA conducts its safeguards inspections in Ukraine.

- The 1979 Additional Protocol to the Geneva Conventions, Article 56 of which prohibits attacks on nuclear power plants where such an attack may cause the release of dangerous radioactive forces and severe losses among the civilian population.
- The Convention on Nuclear Safety (1994), which sets out international commitments on the safe operation of land-based civil nuclear power plants.
- UN General Assembly resolutions condemning violations of Ukraine's territorial integrity and sovereignty since 2022, which, while not specific to the nuclear plants, form the broader legal context for this issue.
- Statements by the IAEA Director General to the UN Security Council, including the presentation of the Five Concrete Principles on 30 May 2023, which, while not a treaty, represent the most concrete framework so far proposed for protecting the ZNPP.

Delegates are encouraged to locate and review the full text of at least two of these instruments or of relevant UN resolutions as part of their research.

X. Useful links and sources

For your research, please rely on valid and reliable sources, such as the official United Nations (UN.org), the IAEA, or other official intergovernmental and governmental websites. The following sources were used in the preparation of this report and are strongly recommended as starting points for your own research:

- World Nuclear Association, "Ukraine: Russia-Ukraine War and Nuclear Energy": https://world-nuclear.org/information-library/country-profiles/countries-t-z/ukraine-russia-war-and-nuclear-energy
- OECD Nuclear Energy Agency, "Ukraine: Current status of nuclear power installations": https://www.oecd-nea.org/jcms/pl_66130/ukraine-current-status-of-nuclear-power-installations
- International Atomic Energy Agency, "Nuclear Safety, Security and Safeguards in Ukraine": https://www.iaea.org/topics/response/nuclear-safety-security-and-safeguards-in-ukraine
- IAEA web portal on the conflict in Ukraine, for the most recent official updates: https://www.iaea.org/ukraine-conflict

We wish you a lot of success with your research and look forward to a productive and well-informed debate in committee.

Best regards,
Your Student Officers
Zohre Bayat