POLICY BRIEF

APLN

Russian Aggression Against Ukraine: Impact on Nuclear Issues

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Cover Photo: Zaporizhzhia Nuclear Power Station cooling towers (OlyaSolodenko)

EXECUTIVE SUMMARY

This policy brief examines the impact of Russia's invasion of Ukraine, particularly its attacks on Ukraine's nuclear power plants, on various nuclear issues, including nuclear security, IAEA safeguards, nuclear non-proliferation and disarmament efforts, as well as the peaceful use of nuclear energy. Protecting Ukraine's nuclear power plants should be a priority, as attacks on these facilities could have devastating consequences. There are several measures that the international community can take to safeguard Ukraine's nuclear power plants and mitigate the risks posed by Russia's threats. These measures include increasing international support for Ukraine's efforts to enhance its security infrastructure, providing technical assistance to improve safety measures at its power plants, and strengthening IAEA safeguards. There is an urgent need for action by the international community to protect Ukraine's nuclear power plants and prevent further escalation of the crisis. This can be achieved through diplomatic efforts aimed at persuading Putin to act, as well as utilizing the UN General Assembly to dispatch peacekeepers.

INTRODUCTION

Russia's invasion of Ukraine is a violation of the fundamental principles of the international community: sovereign equality, political independence, territorial integrity, and peaceful resolution of disputes.

After its military invasion of Ukraine last year, Russia attacked and occupied the Chornobyl nuclear power plant. In March, it also attacked the Zaporizhzhia nuclear power plant, and battles have repeatedly taken place in the vicinity of the Zaporizhzhia plant since then. The situation remains one of the most serious in history in terms of nuclear safety and security. Attacks on nuclear power plants are prohibited by the Geneva Conventions, as are attacks on dams and dikes that have "dangerous forces" built into them. This is because their destruction would cause significant humanitarian damage to the civilian population.

While the focus of Russia's military aggression against Ukraine has been on the threat of nuclear weapons use, the potential devastation caused by attacking nuclear power plants cannot be ignored. Therefore, protecting nuclear power plants should also be a priority. This brief examines how Russia's threats to use nuclear weapons and attacks on nuclear power plants would affect nuclear non-proliferation, disarmament, security, and the peaceful use of nuclear energy. It also proposes measures the international community can take to protect Ukraine's nuclear power plants.

WHAT HAPPENED TO UKRAINE'S NUCLEAR FACILITIES?

In March of last year, Russia notified the IAEA that it had taken control of the Zaporizhzhia nuclear power plant, which continues to be occupied. Since then, there have been incidents of shelling and mine explosions at the plant's facilities. The most concerning issue is the intermittent loss of external power and communications, which poses immense danger. In response, an IAEA mission headed by IAEA Director General R. Grossi visited the site in early September of last year, and several Ukrainian officials have been stationed there since then. In early October, it was reported that the director of the power plant and 50 Ukrainian staff members were detained. As of March of this year, the plant lost all power on six occasions.

In April, the South Ukraine Nuclear Power Plant suffered a missile strike, followed by a temporary loss of external power due to shelling in September. The Riune and Khmelinitsky nuclear power plants in western Ukraine also experienced a loss of external power in early and late November.

The Chornobyl nuclear power plant, which suffered an accident in 1986 and is now covered by a sarcophagus, was occupied at the beginning of the military invasion until the end of March. Due to repeated shelling and other activities including the digging up of soil, high radiation levels were observed at one point. After the withdrawal of

Russian troops, an IAEA mission visited the site in April, May, and December to check the safety and security status of the reactor.

Regarding other nuclear facilities, in February, part of the waste facility in Halikiwu was destroyed, and a missile landed on the waste storage facility in Kyiv. Similar situations have occurred at other research facilities.

At one point, Russia claimed that Ukraine was manufacturing dirty bombs (radioactive material dispersal devices), but the IAEA which conducted inspections at Ukraine's request, confirmed no such activity at any of the three facilities involved.

HOW DID THE INTERNATIONAL COMMUNITY RESPOND?

1) IAEA (International Atomic Energy Agency)

First, the IAEA has placed its utmost focus on the safety and security of Ukraine's nuclear power plants. The IAEA Board of Governors adopted three resolutions: 1) condemnation of Russian aggression and the return of all nuclear facilities to Ukraine's control; 2) cessation of occupation of the Zaporizhzhia nuclear power plant; and 3) cessation of all activities at nuclear-related facilities in Ukraine.

Since the start of the Russian invasion, the IAEA has also established an emergency center to provide Ukraine with necessary equipment and technical cooperation, and has been providing information about the status of nuclear facilities on its website. IAEA has also carried out environmental monitoring on a temporary basis, and no leakage of radioactive materials from related facilities has been observed so far. In addition to Zaporizhzhia plant, IAEA staff have been stationed at all nuclear power plants since January of this year.

Furthermore, the IAEA issued seven key points to be observed concerning the safety and security of nuclear facilities, and has published three reports on the current status of Ukraine (in April and September 2022, and in February 2023). The seven points are: ensuring 1) the integrity of nuclear facilities, 2) safety and security, 3) that personnel can perform their duties, 4) external power supply, 5) necessary supplies, 6) communication with the regulatory authorities, and 7) conducting radiation monitoring.

2) United Nations

The United Nations has responded to the Russian attacks by convening an emergency Special Session of the General Assembly, which has adopted six resolutions so far. These are: 1) condemnation of military aggression; 2) condemnation of attacks on civilians; 3) explanation of the background to the veto exercise in the Security Council; 4) nullification of the annexation of the four states; 5) compensation for damages caused by the aggression; and 6) immediate withdrawal of Russian troops from the occupied area. The Human Rights Council also proposed a special investigation into the actions of the Russian military and adopted a resolution – opposed by Russia – which

condemned the aggression. While Secretary General Guterres visited Moscow and met with President Putin to mediate on the establishment of humanitarian corridors and grain exports together with Turkey, which was realised in August and extended in November, there is a sense that the UN has left the matter of specific actions focused on ensuring the safety of nuclear power plants to the IAEA.

3) G7/NATO/EU/G20/International Court of Justice

The G7 issued a statement of condemnation of Russia and expressed support for the IAEA's activities while NATO and the EU also condemned the military aggression as a violation of international law and humanity, as it undermines international security and stability. The G20 also issued a statement at its summit meeting in Indonesia, with many countries condemning Russia. The International Court of Justice (ICJ) has also issued a statement condemning Russia, and in response to Ukraine's complaint, the ICJ has issued provisional measures for Russia to immediately suspend its military activities. Therefore, Russia is also in violation of Article 94 of the UN Charter, which stipulates that member states are subject to the jurisdiction of the ICJ. The EU-JRC (Joint Research Center) has deployed a network of 5,100 radiation monitoring stations in 39 countries, including Europe, Turkey, Ukraine, and Russia, and emergency response measures have been put in place.

THE IMPACT OF RUSSIAN AGGRESSION ON NUCLEAR ISSUES

How does Russia's threat to use nuclear weapons and its attack and occupation of nuclear power plants affect IAEA safeguards, nuclear non-proliferation and disarmament, nuclear security, and peaceful use of nuclear energy?

1) Impact on IAEA Safeguards

Safeguards are an inspection measures conducted by the IAEA to confirm that nuclear materials such as uranium and plutonium are used only for peaceful purposes and not diverted to military purposes, and that there are no undeclared nuclear materials or nuclear activities in member countries. The Nuclear Non-proliferation Treaty (NPT) obliges non-nuclear-weapon states parties to the treaty to accept safeguards to prevent them from pursuing nuclear development.

The military aggression in Ukraine has significantly hampered the IAEA's safeguards activities and made it impossible to reach a conclusion. In other words, the Ukrainian government has not been able to fulfill its obligations under the safeguards agreement because of the Russian occupation of the Zaporizhzhia nuclear power plant. As a response, Director General Grossi is sending missions to Chornobyl and Zaporizhzhia to secure inspection activities.

2) Impact on Nuclear Non-proliferation and Disarmament Efforts

President Putin's repeated threats to use nuclear weapons have lowered the "threshold" for nuclear use and inadvertently raised the political value of nuclear weapons. This has given incentives to potential nuclear powers, such as Iran, the Republic of Korea, and other countries that have attempted to develop nuclear programs in the past, and ambitious dictators to pursue nuclear weapons. In a speech in Halifax, Canada, late last year, US Secretary of Defense Austin noted that "Because Putin's fellow autocrats are watching. And they could well conclude that getting nuclear weapons would give them a hunting license of their own. And that could drive a dangerous spiral of nuclear proliferation."[1]

The invasion has also caused countries to reaffirm the usefulness of nuclear deterrence, leading to the application for NATO membership by Finland and Sweden, both of which had previously attempted to stay free of alliance relationships. President Zelensky also expressed his desire to join NATO in October. As a result of this reaffirmation of the usefulness of nuclear deterrence, nuclear disarmament has become less of a priority, and efforts toward it may stagnate in the future. The invasion may also have reaffirmed North Korea's commitment to its own nuclear deterrent, reducing the space for dialogue and diplomacy.

Furthermore, the violation of the Budapest Memorandum will inevitably slow down efforts toward denuclearisation. Ukraine gave up 5,000 nuclear weapons inherited from the former Soviet Union in exchange for security guarantees provided by the United States, Russia, and Britain. However, since even this "Ukrainian model" of denuclearisation did not work, it is easy to imagine that the nuclear armed states will not give up their nuclear arsenals easily in the future.

At the NPT Review Conference last August, only Russia rejected the final document. There is concern that confrontation among the five nuclear weapons states, i.e., China and Russia vs. the United States, the UK and France, will make it difficult to reach agreements in future NPT conferences, thereby reducing the centripetal force of the NPT, which is the cornerstone of the nuclear non-proliferation regime.

3) Impact on Nuclear Security

Nuclear security aims to prevent terrorism and other criminal acts targeting nuclear and other radioactive materials, including during their transportation. It involves measures to prevent the theft of nuclear and radioactive materials and the manufacturing of nuclear explosive devices and dirty bombs.

One concern regarding the impact of Russia's invasion of Ukraine on nuclear security is the so-called "insider threat." Insiders could include members of the Russian militia,

[1] Lloyd J. Austin III, "Why Ukraine Matters" (Halifax International Security Forum, November 19, 2022).

such as Wagner, Russian prisoners deployed to the front lines, and mercenaries, including uncontrolled military personnel. These individuals may be able to steal nuclear materials and distribute them to terrorists, or may cause the scattering of radioactive materials through acts of sabotage. Since the Nuclear Terrorism Convention and the Revised Convention on the Physical Protection of Nuclear Material are not applicable in wartime, there are currently no regulations in place to govern insider threats during wartime. This is an issue that will need to be addressed in the future.

4) Impact on Peaceful Uses of Nuclear Energy

The peaceful use of nuclear energy began in the late 1950s, mainly in the U.S., following U.S. President Eisenhower's Atoms for Peace speech, and has since spread throughout the world. Today, there are approximately 440 nuclear reactors in operation worldwide.

While Germany, Italy, the Republic of Korea, and a number of other countries decided to phase out nuclear power after the Fukushima Daiichi nuclear accident,[2] there have been no reports of countries halting nuclear power generation due to the attacks on and occupation of nuclear power plants in Ukraine. Rather, there appears to be a growing movement to re-evaluate nuclear energy as an alternative to Russian natural gas and crude oil supply problems, as well as a means to address climate change issues.

However, the attack on a nuclear power plant has raised concerns about the protection of nuclear power plants in the event of a contingency, and what kind of system should be implemented to ensure their safety. This incident has caused anxiety among Ukraine's neighbors with nuclear power plants, including those in former Eastern Europe, the Baltic Sea region, and the Nordic countries.

FUTURE ACTIONS

1) Support for IAEA

The first step is to strongly support the activities of the IAEA, which has done everything in its power to protect nuclear facilities, including the Zaporizhzhia nuclear power plant. Director General Grossi has taken significant actions, including calling on the United Nations and the leaders of Russia and Ukraine to establish "nuclear safety and security protection zones" and dispatching support teams to these facilities. The IAEA's efforts to date should be strongly encouraged and supported. Incidentally, the Japanese government has provided a total of 2 million euros in support, including the provision of four bulletproof vehicles to the IAEA.

[2] The Republic of Korea's incumbent government later reversed this decision.

2) Diplomatic Efforts

The international community needs to double down on diplomatic efforts to protect Ukraine's nuclear power plants. Japan, having experienced the Fukushima Daiichi nuclear power plant accident, should work with countries that promote the peaceful use of nuclear energy to tackle the challenge of protecting and preserving nuclear power plants. To this end, it is important to appeal to Russia via the leaders of BRICS and CIS, who have close ties with President Putin, about the inhumane consequences if Ukraine's nuclear power plants were to be damaged. Indian Prime Minister Modi has stated that, "this is not the time for war." Chinese President Xi Jinping and Kazakhstan's President Tokayev have similar concerns. One of China's 12-point proposal announced in February states that "China opposes armed attacks against nuclear power plants or other peaceful nuclear facilities." It is essential to continue conveying messages that will reach President Putin through the leaders of countries that are friendly with Russia.

Furthermore, countries that operate nuclear power plants need to be more vocal about this issue. With 30 countries and Taiwan operating nuclear power plants, they can consolidate their efforts and propose effective measures for the "safety and protection of nuclear power plants in time of war." Such an effort would support the ongoing activities of the IAEA, with Japan expected to take the lead in this area.

3) Use of the UN General Assembly

The UN General Assembly's "Uniting for Peace" resolution could also be utilized. Given the current dysfunctionality of the Security Council due to Russia's veto power, the General Assembly is taking on an increasingly important role. While the General Assembly has adopted six resolutions on this matter so far, they have yet to produce a satisfactory outcome.

The General Assembly should adopt the resolution on "Safety and Protection of Nuclear Power Plants in Wartime" and consider dispatching peacekeepers to protect nuclear facilities in Ukraine. This would be in line with Director General R. Grossi's call for a "Nuclear Safety and Security Protection Zone." For example, during the Suez Crisis or the Second Middle East War, the General Assembly dispatched the UN Emergency Force (UNEF) under the "Uniting for Peace" resolution when the Security Council was dysfunctional due to the veto power of its permanent members. The General Assembly could explore this possibility again in this instance. The deployment of peacekeepers by the General Assembly requires consent of the parties involved. Therefore, it is desirable to obtain Russia's approval and, if possible, a limited ceasefire agreement in the Zaporizhzhia region. The IAEA's "protection zone" should be realized through active intervention (good offices) by the UN Secretary General and volunteer countries, such as Turkey, which has made great achievements in grain exports, or Kazakhstan, which is sensitive to radiation damage due to the large number of affected people at Semipalatinsk, the former Soviet Union's nuclear test site. While Director-General

Grossi is making commendable efforts to establish a "protection zone," it would be inappropriate to leave this matter solely to the IAEA.

CONCLUSION

The nuclear aspect of Russia's invasion of Ukraine is not limited to the threat of nuclear weapons use. It also encompasses the critical need to protect nuclear power plants and prevent a catastrophic accident. There is still much that can be done to address this matter. As a non-permanent member of the UN Security Council since January of this year and the current president of the G7, Japan is well-positioned to exercise proactive leadership on these issues.

ABOUT THE AUTHOR

Toshio Sano was appointed as a Commissioner of the Japan Atomic Energy Commission (JAEC) in December 2017, and reappointed in December 2020. Before the appointment to the commissioner, he had developed his career in the diplomatic circle since his entering into the Ministry of Foreign Affairs (MOFA) in 1977, and had gained considerable experience on the issues related to non-proliferation and the international cooperation in energy policy in the diplomacy. Specifically, he was a Vice- Chair of 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. His former postings include the Ambassador to the Conference on Disarmament in Geneva from 2013 to 2017, the Ambassador to the Kingdom of Denmark from 2010 to 2013, and Director-General of Disarmament, Non-proliferation and Science Department of MOFA from 2008 to 2010.

ABOUT APLN

The **Asia-Pacific Leadership Network for Nuclear Non-proliferation and Disarmament (APLN)** is a Seoul-based organization and network of political, military, diplomatic leaders, and experts from across the Asia-Pacific region, working to address global security challenges, with a particular focus on reducing and eliminating nuclear weapons risks. The mission of APLN is to inform and stimulate debate, influence action, and propose policy recommendations designed to address regional security threats, with an emphasis on nuclear and other WMD (weapon of mass destruction) threats, and to do everything possible to achieve a world in which nuclear weapons and other WMDs are contained, diminished, and eventually eliminated.


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