

## REVIEW

**of the Official Opponent Dr. Ulrich Thomas Kühn on the Dissertation of Mariia Kurando titled “Nuclear Security in International Conflict Zones”, submitted for acquiring the degree of Doctor of Philosophy in the specialty 052 “Political Science”**

**The relevance of the chosen topic** is determined by Russia’s war against Ukraine and the Russian occupation of the Zaporizhzhia nuclear power plant (ZNPP) in conjunction with legal and political gaps in the international nuclear security regime to deal with nuclear security issues in war zones. Russia’s unlawful occupation of the ZNPP has triggered concerns that the nuclear power plant in question might suffer severe damage or inoperability up to a point where the possible (large-scale) release of radioactive material might lead to a widespread civilian catastrophe. The seriousness of this contingency has been underscored by the IAEA’s continued efforts to ensure the safe operation of the ZNPP. Taken together, there is a clear and pressing political relevance of the topic under scrutiny. The second aspect of the thesis – shortcomings in the international regime on nuclear security – gets its relevance from the apparent inability of the international community to prevent cases like the ZNPP and to deal with them according to established legal guidelines. This fact gets expounded by politics that go beyond the current Ukraine War. In October 2024, president-elect Donald Trump said Israel should attack Iran’s nuclear sites. In November 2024, the former head of Israeli military intelligence said that a Trump administration made an Israeli attack on Iran’s nuclear sites more likely. As demonstrated by the Chernobyl accident, the release of radioactive material into the atmosphere has global consequences. As demonstrated in the thesis, the international community’s responses in Ukraine are characterized by ad hoc measures that aim at preventing the worst in lieu of generally agreed mechanisms that may have prevented the crisis from unfolding in the first place. The thesis thus deals with an increasingly pertinent blind spot in international governance – one that has been acknowledged and discussed before, but never against such a pressing political background as the one witnessed today in Ukraine.

**The degree of validity of scientific provisions, research findings and recommendations.** The thesis by Ms. Kurando is distinguished by the validity of scientific positions and conclusions. Her thesis formulates several scientific provisions that are properly researched and substantiated and make a significant contribution to the study of nuclear security. In particular, this applies to the historiographical dissection of the nuclear security complex, and thus the very concept of nuclear security. The thesis is right in arguing that this regime complex underwent several transitioning phases, starting with its inception of the IAEA – a US brainchild that can be traced back to the idea of Atoms for Peace – complemented by the NPT and an evolving model of IAEA safeguards, up to the

focus on nuclear terrorism as a result of the 9/11 attacks and the subsequent Nuclear Security Summits of the Obama era. The conclusion that nuclear security is entering a fourth developmental phase with the Russian occupation of the ZNPP sounds valid against the background of a looming Israeli-Iranian skirmish involving Iranian nuclear installations. In addition, it is valid to conclude that nuclear security measures, as comprised in the regime complex prior to the Ukraine War, failed to address or were not designed to address military attacks by state actors, such as Russia. The discussion whether International Humanitarian Law already fully captures the conundrum highlighted in this thesis gets also correctly portrayed, though the aspect of “*ius in bello*” vs. “*ius ad bellum*” affecting nuclear security norms may have benefitted from more discussion (it is though necessary to highlight that the relevant scholarly literature on this issue is still in its infancy). Finally, the portrayal of differentiating between nuclear security and nuclear safety is fully in line with the relevant literature and the stipulations of relevant international organizations, such as the IAEA.

The qualitative review of cases of military attacks by state actors against nuclear installations (both civilian and military) from the early 1980s onwards is very detailed and illuminating as regards the drivers of international politics in relevant multilateral fora. From that review – which is entirely valid – flows an interesting insight: condemnation of said attacks depends not primarily on established or subsequent norms (e.g., CPPNM Amendment or ICSANT) but on the political circumstances and the states involved (the detailed account the thesis provides as regards multilateral responses during the 1980s and 1990s reads very convincing and interesting). The volatile policies of the United States in condemning Israeli attacks are rather telling in that regard. The corresponding literature review is both broad and specific and ties the subsequent discussion neatly to the significant works by Ramberg and others from the 1980s.

The descriptive part highlighting the bilateral India-Pakistan confidence-building measures (CBMs) in the nuclear realm are valid as regards a possible aftermath of the ongoing Ukraine War. Perhaps, with some imagination and enough cooperative will on all sides involved, Ukraine and Russia could reach a similar agreement sometime in the future. Speculation aside, the detailed description of the South Asian conflict between two nuclear-weapons possessors and their regime-type network of CBMs is not only valid in a descriptive sense but also relevant as regards uncharted territory for nuclear security in a multilateral sense. The recommendations given in the thesis in that context may sometimes sound a bit too hopeful (though the author highlight the shortcomings of the bilateral framework), given the current dire situation of Ukraine and Russia’s unwillingness to cease its war efforts anytime soon. However, it is worth noting that too few scholars have started thinking about ‘the day after’ in a cooperative sense, i.e., how and under what conditions the current warring parties might secure a possible future ceasefire by means of cooperation – and that includes possible CBMs in the nuclear-civilian realm. Thus, the recommendations

provided in the thesis have high relevance not only in a multilateral sense (i.e., closing gaps in governance) but also in a bilateral sense and from a scholarly point of view.

**The most important results and scientific novelty.** The scientific novelty of the results obtained is that it is the first thorough and comprehensive study of nuclear security in relation to military action against nuclear installations and against the timely background of the ZNPP crisis. It thus aims to draw scholarly and political attention to the policy topic at hand as well as formulating theoretical answers on how to avoid such crises in the future. The research objectives and conclusions are consistent with the goal. The structure and content of the dissertation correspond to the chosen topic. The theoretical conclusions are supported by the analysis of specific examples of nuclear security governance. Beyond these already quite positive results, the thesis contains several novelties that warrant appreciative discussion.

The thesis argues convincingly that there is a long-ignored governance gap at the multilateral level, and that the fate of the ZNPP has made closing this gap more urgent. This insight is important since nuclear security has been viewed for decades almost exclusively through the lens of non-state threats and the instruments to deal with such threats have not evolved to a degree where they could be applied in a state-led attack context. Another important result of this thesis is closely tied to the first. As a consequence of policy inertia, a scholarly blind spot exists when it comes to rethinking nuclear security. Ramberg's predictions from the 1980s – i.e., that states could strategically use civil nuclear installations during wartime in order to issue threats and for blackmailing purposes – were already quite far-reaching back then but were also largely ignored or forgotten. The thesis reminds us of this disservice to our field and makes one think anew about the problems at hand. Another critical insight, in line with Realist or Neoclassical Realist models, is that when push comes to shove the Westphalian model still trumps the liberal international order. This insight as such is not new; it has, however, not been applied to the realm of nuclear security, at least to my knowledge. The United States's and Russia's handling of state-led military nuclear security problems, tied to their own actions or the actions of allies (e.g., Israel), underscores that international institutions, including norms, are comparably weak when it comes to penetrating the state level, and particularly states at war. Highlighting the Indian-Pakistani model might provide a blueprint for bilateral cooperation, but the question persists whether such cooperation could prevent anything in times of real crisis. Finally, by linking the entire discussion about the ZNPP and the Ukraine War to system-level analysis, the thesis underscores an important result that receives increasing scholarly attention: that the new post-post-Cold War order (in whatever polarity) will make collective action more difficult to achieve.

In terms of scientific novelty, looking at nuclear security from the angle of state-led military action against nuclear installations and embedding the ZNPP

issue within these debates yields new insights. To be more precise, taking further the scholarly discussion initiated by Ramberg and others and contrasting it with today's nuclear security challenges is certainly new and takes the discussion on nuclear security of the past two decades – always centered around nuclear terrorism – forward. While Ramberg et alii's conclusions remained very much theoretical, the reality of Russia occupying a nuclear power plant in a war zone as part of a war of aggression very much brings urgency to the topic. The thesis thus is in the best of scholarly traditions by re-discovering theory in order to deal with a real-world problem. Likewise new is the thesis' contrasting the evolution of nuclear security with the evolution of collective action to prevent military attacks against nuclear installations, thereby helping to further develop the nuclear security paradigm, which, according to Ms. Kurando, is entering a new era. Finally, it is certainly novel, and clearly the most creative part of the thesis that it endeavors to draft a theoretical model for a potential future Ukraine-Russia framework on protecting nuclear installations along the lines of the India-Pakistan agreement. This part, in all its cooperation-embracing ethos, may sometimes sound a bit far-fetched today, but could become all the more prevalent in the future.

**Practical significance of the results.** The practical aspects of this thesis are fourfold. It can help complement and further develop existing scholarly work on the nuclear security regime complex. In addition, it may have practical value in a potential future world where (a) Russia's war against Ukraine has come to an end, and (b) both sides are interested in setting up cooperative measures to prevent renewed fighting. Beyond the bilateral level, the findings contained in this thesis will have practical value for policymakers that deal with nuclear security issues in international organizations such as the IAEA or in the NPT context. The findings may even have some practical value – in a kind of reverse feedback loop – for the Indian-Pakistani relationship.

**Discussion points and remarks:**

1. The thesis claims that the nuclear security concept is entering a novel (fourth) phase with the Russian occupation of the ZNPP. What other international indicators point towards the emergence of such a fourth phase, beyond the Ukraine War?

2. The thesis argues that “it is not the ambiguity of the existing legal base that is a problem but compliance with it” (p. 168). If that is the case, the lack of enforcement mechanisms, i.e., international anarchy, is at the root of the problem. It would be interesting to learn how Ms. Kurando would suggest dealing with this perennial problem of the Westphalian Model in the nuclear security realm.

3. Ramberg's conclusions about state-led military action against civilian nuclear installations were quite far-reaching at their time but yielded little scholarly attention. Russia's malign actions against Ukraine clearly changed the picture and helped verify Ramberg's predictions. Why was the scholarly

community not more interested in Ramberg's predictions of state-led violence in the nuclear security realm following the end of the Cold War?

4. When looking at the few instances of states attacking other states' nuclear installations, it becomes clear that the international community reacted in volatile ways. Sometimes it accepted the justifications provided by the attacking state; sometimes it refused to accept. Is there a certain pattern when states are more inclined to accept this specific form of violence?

5. The decade before the end of the Cold War saw a number of instances where the two blocs cooperated on nuclear security issues (in particular the proposed Radiological Weapons Convention). Why did the sides fail to establish a concise framework aimed at preventing attacks against nuclear installations?

6. The India-Pakistan CBM agreement in the nuclear security domain is one the one hand far-reaching and on the other (as Ms. Kurando mentions) not exhaustive in terms of its compliance mechanisms. What explains the absence of verification and compliance mechanisms in the bilateral 1988 Agreement on Prohibition of Attacks on Nuclear Installations and Facilities?

7. It is true, the world is currently entering a new period of global ordering, e.g., with China emerging as a peer competitor to the United States. These shifts in power create collective action problems, as the thesis mentions. But if there is no unipolar order with only one power enforcing a 'liberal international order,' what other forms of global governance are still thinkable to remedy the collective action problem?

**The general conclusion about the thesis** is that the thesis by Ms. Kurando is characterized by scientific rigor and originality. Its results are reliable and substantiated. Based on the above, it can be stated that the thesis of Mariia Kurando on the topic: "Nuclear Security in International Conflict Zones" is an independent and complete scientific research containing relevant results important for political science, and its author Mariia Kurando deserves to be awarded the degree of Doctor of Philosophy in the field of knowledge 05 "Social and Behavioral Sciences," specialty 052 "Political Science."

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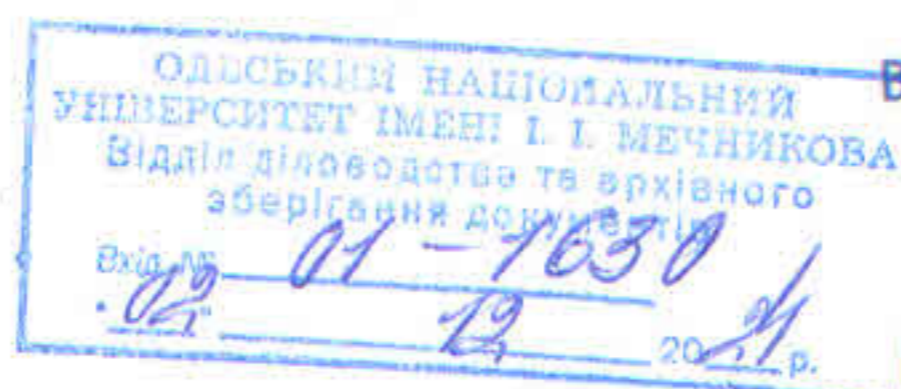
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