

Amanda Rodrigues de Carvalho, Elaine Aparecida Rodrigues, Julia Cristina Garcia, Delvonei Alves de Andrade, Jose Oscar William Vega Bustillos

ENIN - Nuclear Safety & Security, non-Proliferation, Safeguards and Nuclear Forensics,

Radioprotection and Safety Culture

8 May 2024



Source: Eletronuclear



Introduction

- War developments in the 20th century;
- It can be argued nuclear weapons have changed the way war itself is waged;
- Definition of war vs diplomacy
- Development and deployment of nuclear weapon;
- Cold war and nuclear tests;
- Development of a legal framework.

Methodology

- Definition of paradigms and concepts;
- Analysis on a systemic level and of the structural links between states through the concept of international regimes, with the nuclear non-proliferation regime as the object of study;
- Theoretical and conceptual framework based on the work of Raymond Aron for the insertion of nuclear weapons into war and the theory of international regimes, as well as a bibliographic search using the Web of Science database.

Results and Discussion

Essential concepts and premises

- International Relations as a field of study;
- There is no major force that governs states the international system is considered anarchic;
- Legal frameworks in the international system and international regimes;
- Interdependence between actors it's not equal or balanced since certain actors have greater level of power and influence.

The Non-Proliferation Regime

- Legally binding multilateral treaties, verification of compliance and some supplier control mechanisms - the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), complemented by other international and bilateral treaties and inspection bodies;
- Arms control agreements ignore non-strategic and non-deployed warheads thus, although the total number of nuclear warheads in the world has decreased, this masks
 two
 situations:
 - a) the nations that possess nuclear weapons continue to modernize their arsenals;
 - b) nuclear weapons continue to be part of the concept of national security.

Nuclear weapons and the concept of war

- The cost of total war today, there is the possibility of the destruction of a state and the eradication of populations;
- Weapons of mass destruction have changed aspects of the relationships between states, but not their nature;
- The effectiveness of deterrence depends on three factors: psychological, technical, and political
- During the cold war, the two nuclear powers had the same main interests: mutual non-destruction and preventing the spread of nuclear weapons;
- These interests still prevail today, which in practice maintains the arsenals of the current powers and tries to prevent other countries from developing their own;

- The nonproliferation regime can be seen as biased, as it keeps the status-quo; on the other hand, nuclear disarmament is unlikely;
- The way radiation threats are brought up in the context of conflict is in constant development, as well: the targeting of nuclear facilities and the emergence of smaller-scale radiological weapons, such as "dirty bombs" adds an extra level of complexity, bringing in non-state actors as possible threats and requiring cooperation between states to control the production and transportation of radiological materials.

Conclusions

- Complexity in building an effective legal framework
- Sovereignty the level of a state's participation in an international regime can only be determined by itself;
- The greatest impediment to a nuclear war is the possibility of retaliation by the other parties; the emergence of nuclear weapons changed the way war is waged and the scale of destruction, but the nature of the relationships between actors continues the same.

Amanda Carvalho

PhD student - Instituto de Pesquisas Energéticas e Nucleares (Nuclear and Energy Research Institute - IPEN) amandardcarvalho@usp.br

Acknowledgements:

The authors would like to thank CAPES for the financial support.

