IAEA

Ensuring Radioactive Waste Management in Developing Countries

Background:

As countries have begun to increase the usage of Nuclear technology for modern technology and arm, the amount of radioactive waste has exponentially increased. Almost all of the International Atomic Energy Agency (IAEA) member states have contributed to the dramatic increase in radioactive waste presented mainly through nuclear power plants and often nuclear weapon development. According to the United Nations (UN), while it can be noted that 75% of the IAEA 122 Member States don't have nuclear power, most Member States use radionuclides for research, medical, industrial and other institutional applications. Radioactive waste can be defined as nuclear fuel that has been used in a reactor once and then contained in the fuel in which it was produced: making used fuel a known high-level radioactive waste. Radioactive waste is typically classified as either low-level (LLW), intermediate-level (ILW), or high-level (HLW), dependent, primarily, on its level of radioactivity. For about five years, reactors run on nuclear fuel to produce electricity. When these reactors are removed, it is intended for them to be stored, contained, and eventually disposed of; however, due to various economic and social contentions, radioactive waste is not being properly discarded. This poses a threat not only to communities near such reactors but also to the environment and ecology. Effects of exposure may include skin burns and acute radiation syndrome in the short term and cancer and cardiovascular disease in the long term. While some temporary solutions have been made, a permanent solution has not been devised. As the population in dense areas grow, and the usage of nuclear energy becomes more and more necessary, a feasible solution for the disposal of radioactive waste becomes imperative.

UN Involvement:

In order to mitigate the effects of inefficient and unregulated radioactive waste management, the United Nations has held several conventions and events raising awareness of the issues and attempting to assist in proper legal measures to be taken in cases of violation. Recently, the IAEA worked alongside the Government of the People's Republic of China, to hold a seminar on radioactive waste management practices and issues in Beijing from October 10th to 14th 1994. This seminar discussed multiple important topics such as the ethical issues arising from the control, situations with an excessive amount of radioactive waste, and tested solutions in different places, Furthermore, in order to facilitate proper nuclear power energy usage, the UN called for two conferences in November at Vienna. The UN also hosted the third International Conference on Nuclear Knowledge Management and the International Conference on the Safety of Radioactive Waste Management in 2018 for the purpose of informing government officials and encouraging change in legal management techniques. This resulted in an increased focus on the usage of repositories, a possible long term solution for the problem. In November 2017, the Ministerial Conference about Nuclear Power took place in Abu Dhabi from 30 October to 1 November 2017. Many developing countries, such as the United Arab Emirates, United States, Malaysia, India, and South Africa partook in this conference to manage radioactive waste opportunities for exchanging information on their regulating and operating experience as well as to discuss the particular issues fomenting in countries.

Past Committee Actions:

The IAEA has taken initiative in dissipating the detrimental effects of misguided nuclear waste management by hosting seminars and establishing programs that work alongside less

developed countries such as India, Congo, Nicaragua, Bolivia, and Ethiopia. Most noticeably, the establishment of the principle of fundamental truth was elaborated and condensed into the "Safety Fundamentals for Radioactive Waste Management". Due to the lack of legal reinforcement in less developed countries, augmented by overpopulation and corruption, the necessity for a strict guideline on what level of radioactive waste should be banned and faced with severe repercussions. These Safety Fundamentals were formed through the IAEA and then contained in the RADWASS1 document titled "The Principles of Radioactive Waste Management" which was submitted to the Board of Governors of the IAEA in 1994. In *The Policies and Strategies for Radioactive Waste Management* guide book, the possibilities of Shared, Centralized, and Mobile Processing facilities were discussed along with the strategy in which it will be implemented.

Sustainable Development Goal 7:

While the limitation of nuclear waste may be a crucial goal of the IAEA, the United Nation's 7th sustainable development goal must be considered. This goal describes the need for all to receive affordable, reliable, and sustainable modern energy sources. Therefore, nuclear energy cannot be completely eliminated as it provides hundreds of millions of people electricity that fulfills the requirements. In addition, 840 million more people still do not receive consistent electricity so maintaining or increasing the steady increase of access to electricity must be considered when writing a resolution.

Questions To Consider:

- 1. What are the circumstances promoting the legal suspension of Nuclear management?
- 2. How has your particular country impacted the seminars and UN conventions addressing nuclear power plants?

- 3. What precautionary steps have been taken by your country to either mitigate or propagate the spreading of low-level (LLW), intermediate-level (ILW) and high-level (HLW) radioactive waste?
- 4. Why are possible alternatives to reduce radioactive waste management being undermined by authority figures?
- 5. How have climate regulating laws influenced nuclear development, as well as nuclear reactor, storing?
- 6. What socio-economic factors are limiting less developed countries from placing limitations on toxic reminanace and its effects on geography?

Resources

- 1. <u>http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-</u> wastes/radioactive-waste-management.aspx
- 2. <u>http://www.iaea.org/inis/collection/NCLCollectionStore/_Public/27/042/27042093.pd</u> <u>f?r=1</u>
- 3. <u>https://news.un.org/en/story/2016/09/539322-un-atomic-chief-reports-agencys-role-nuclear-safety-sustainable-development</u>

4. <u>https://www-</u>

pub.iaea.org/MTCD/Meetings/PDFplus/2004/cn124meetingsummary.pdf

5. <u>https://www-</u>

pub.iaea.org/mtcd/publications/pdf/pub1175 web/book/pub1175 web.pdf

6. https://www.iaea.org/sites/default/files/policiesrwm0609.pdf