



37th Annual MVHSMUN Conference

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The Work of Justice Shall be Peace

Committee: UNEP

Topic: Radio Waste Management & Human Impact on Marine Life

Hi delegates! My name is Julia Bissonette and I am a senior at Laguna Hills High School. I have been in my school's MUN program for four years. I am the President of Science Club, Vice President of National Art Honor Society, and have been in LHHS Secretariat for two years. Outside of school, I work as a math/science tutor and volunteer in STEM-related activities for my community.

Hello Delegates! My name is Kirby Ammari. I am super stoked to be a guest chair for this committee! I am involved in the National Honor Society, El Toro eSports, I work at In-N-Out, and this is my third year of MUN. I cannot wait to hear all of you collaborate your great ideas with one another on such a prevalent topic!

Position papers due on:

January 3rd, 2020

Email to:

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Radioactive Waste Management

I. Background of Topic

Deriving from the Manhattan Project during World War II, nuclear power plants were developed due to demand for civilian use of nuclear energy. Nowadays with the threat of global climate change, nuclear power plants have become a cleaner energy alternative to the burning of fossil fuels. As the use of nuclear energy continues to grow due to increasing energy demands, the management of radioactive waste has become a global issue. Although these plants are able to produce large amounts of energy to meet the global demand, the notable failure of the management of the nuclear plants at Chernobyl (1986) and Fukushima Daiichi (2011) have created the need for stricter safety regulations. Various radioactive waste leaks have occurred in North America, Europe, and Asia since the implementation of nuclear power plants. Radioactive waste is also produced by activities that use radioisotopes in various sciences; however, the primary and growing contributors of radioactive waste are nuclear power plants.

The largest producers of nuclear energy are the United States, France, and Russia. France's overall energy supply is primarily dependent on nuclear energy at 75%, the most dependent of any nation on nuclear energy. However, even the major producers of nuclear energy are split on how much nuclear energy they should produce due to its harmful waste products; while many nuclear energy dependent nations are planning to reduce their reliance on nuclear energy, others are planning to increase their nuclear energy production.

Radioactive waste remains toxic for 200,000 years. Exposure to radioactive waste can increase the risk of a variety of cancers, particularly leukemia, bone, and lung cancer. Additionally, they may cause fires and environmental contamination. Furthermore, a lack of security in facilities containing radioactive waste may allow terrorists to use these dangerous materials. Due to the harm that has historically taken place when nuclear power plants were



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poorly managed and the long-lasting danger of radioactive waste, this has become a global challenge across nations that have implemented nuclear and radiological technologies.

II. UN Involvement

The International Atomic Energy Association (IAEA) and United Nations Environmental Programme (UNEP) have worked together to establish frameworks regarding the disposal of radioactive waste. The UN General Assembly has also prohibited the dumping of radioactive waste (2002).

The IAEA has published the IAEA Plan of Nuclear Safety (2011) to strengthen the safety of nuclear power plants after the accident at the Fukushima Daiichi Nuclear power plant, establishing more thorough safety assessments, emergency preparedness, legal frameworks, regulatory bodies, and organizations, as well as promoting research and development on waste disposal technologies. The same year, the IAEA established requirements for the Disposal of Radioactive Waste (2011) by its Member States to ensure safe disposal of radioactive waste. The IAEA has also supported the implementation of the International Nuclear and Radiological Events Scale (INES) for the international assessment and communication of nuclear and radiological threats.

The UNEP has worked with many of its member states to develop policies and conventions regarding management of radioactive waste. For instance, the Bamako Convention (1998) makes strict prohibitions on all imports of hazardous and radioactive waste to the African continent and ensure that the disposal of waste is done in such a way as to not harm the environment.

III. Possible Solutions



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While some countries plan to phase-out nuclear power plants and other sources of radioactive waste, many are planning to establish or expand their nuclear energy facilities. Regardless, solutions must include methods to manage radioactive waste.

The two primary methods by which nations dispose of radioactive waste are by reprocessing spent fuels or disposal to geological repositories. In the case of reprocessing plants, although a significant amount of fuel is recycled, leftover plutonium is still in need of long-term storage. Geological repositories serve as a longer-term solution, but are still limited by a nation's geological parameters and are in need of a safe-guard for potential leakage.

However, in the short-term, many radioactive wastes are in interim storage where they are more vulnerable to unstable conditions. They may cause unwanted fires and heat if they aren't constantly managed with the necessary materials to keep them cool.

At the moment, scientists have no fully-implementable solution to this issue. However, there has been consensus that the best way to contain radioactive waste is through vitrification, the process of containing radioactive waste in glass. Even though this solution is leak-proof, the radioactive waste will remain toxic and the method is irreversible.

IV. Bloc Positions

Asia: Aside from overwhelming opposition in Japan, nuclear energy is on the rise in Asia. These nations are mixed when it comes to waste management strategies; some reprocess their fuels, while others dispose of waste in repositories. One of Asia's waste management challenges has been the dumping of radioactive waste into the Pacific Ocean.

Europe: Europe has become home to the majority of nuclear reprocessing plants in the world. However, much of Europe is divided regarding the phasing-out of nuclear power due to numerous nuclear power plant accidents over the years. Most European nations send their spent fuel to be reprocessed, but some have decided to store their waste for future use.



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North America: Although a great portion of nuclear power comes from this region, the use of nuclear power is still controversial since many accidents have occurred in the area. Nuclear power plants are slow to expand in this bloc. Most of the radioactive waste in this continent is disposed of in geological repositories.

Latin America: A very small percent of nuclear energy is produced in Latin America. Most of the issues surrounding radioactive waste in the region are caused by a lack of nuclear security; there are many concerns about criminals stealing radioactive materials and using them for harm.

Africa: Since the Bamako Convention (1998), Africa has prohibited imports of radioactive waste. South Africa currently contains the only nuclear power plants on the continent and has established The National Radioactive Waste Disposal Institute to manage their waste.

Middle East: Most of the countries in the Middle East that are planning to use nuclear energy in the near future are currently developing policies for nuclear waste management. So far, there are no accessible solutions for energy reuse or disposal in the region. There are disputes over locations for radioactive waste repositories.

V. Guiding Questions

1. Has your country established any nuclear power plants? Why or why not?
2. What actions has your country taken to prevent nuclear accidents?
3. Which preventative methods against nuclear accidents are most common in your country?
4. Has your country had any previous issues with radioactive waste management? If so, how did your country respond?
5. Does your country promote any clean energy alternatives to nuclear power plants?
6. What other sources of radioactive waste does your country produce besides nuclear waste, if any?

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Human Impact on Marine Life

Background:

Humans have practiced a number of activities such as overfishing, acidification, and ocean pollution which have all had a negative effect on marine ecosystems. A large number of plastics and dangerous chemicals have made the oceans a dangerous place for many species. Many pollutants and chemicals have created what are called “dead zones” due to its overfilling of the oceans with nutrients stealing necessary oxygen from marine animals. Roughly 3 billion people around the world rely on seafood as a main source of food, but due to poor fish management, overfishing, and an ever-growing population, our fisheries face a potential collapse leaving billions without food. Another large issue comes with the oil industry, and due to occasional oil spills, miles of marine life may be eradicated because of oils vast effects on marine species. Humans have been polluting the oceans for as long as they have walked the Earth, but until 1975 there had been no international agreements on the protection of marine environments, and even then, new pollutants have filled the ocean. Carbon emissions have also extensively damaged the ocean because the ocean absorbs some of the carbon dioxides from the atmosphere where it reacts and forms acids in the water, thus lowering the overall pH. Acidification poses a real threat to marine life because of its damage to coral and other marine species. Although international agreements have been made to combat this major issue, large actions must be made to fix the thousands of years of damage humans have inflicted upon the oceans.

UN Involvement:

The United Nations stepped in on this issue in Stockholm, Sweden, in 1972 where the United Nations held its first international conference on the environment. Although not many immediate actions took place at this conference, it created awareness and an ongoing political discussion on international environments. Then, in 1990, the UN held the United Nations Conference on Environment and Development (UNCED) where one of the first international agreements was made and later adopted by 178 governments in Rio de Janeiro, Brazil in 1992. This major step forward created awareness that spread on an international level and which began a movement for nations to continue to pass laws and take actions to combat major ocean pollution.

Later, in 1994, the United Nations held a conference called the Barbados Programme of Action which laid out fourteen major points that the United Nations and its members must focus on



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to uphold the sustainability of the world's environment. These points included climate change and a rising sea level, natural disasters, waste management, and marine resources, all of which are crucial factors to a healthy environment. On top of this, resolution 47/189 was formed laying out a foundation for regrowing a healthy environment on a national and international level. This resolution was enforced by what is called the Commission on Sustainable Development (CSD) which has been given the authority to review the success of this resolution. Five years later, a follow up to the Barbados Programme of Action took place where more serious issues arose around climate change and the rising sea-levels, and also regarding depleting marine resources that are endangered due to growing demands.

Most recently was the Oceans Conference which was held by the UN in New York on June 5-9, 2017. This conference laid out a more extensive solution to declining ocean health and aimed to reverse these damages. The UN planned to integrate national governments with the United Nations to allow for a more international agreement on marine health. In all, this conference aimed to make Goal 14 a reality for the world and the environment.

Case Study: Norway

Due to Norway's geographical location and relationship to the ocean, Norway has been deeply affected by the results of marine pollution. Norway has taken national steps to combat this issue that starts with a rise in awareness. In 2018, after an eye-opening event where a whale was found with dozens of plastic bags and other plastic materials, Norway decided to take action. Norway took economic, political, and social actions that all contributed to the larger issue, marine pollution. By raising awareness of the issue through the Global Citizen Festival and other social events, Norway became a hub for social action. Roughly 45,000 Norwegian citizens attended a beach clean up activity/event not only benefiting the reverse of marine pollution but also further raising awareness.

Nikolai Astrup, Norway's minister of international development, took some of the first steps at the Global Citizen Festival by pledging \$200 million to fight marine plastics. Norway has also taken further steps by removing ocean-polluting companies out of Norway's multi-trillion dollar sovereign wealth fund. Norway is a strong advocate for the Sustainable Development Goal laid out by the United Nations and also for Goal 14. They have done this by forming their own development program that works with mainly developing countries in Asia with long coastlines and reducing the amount of marine litter in those areas. These programs aim to reduce the amount of



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marine litter extensively in the most involved countries that can have the greatest impact on marine life.

Questions to Consider:

1. What areas of marine pollution/human impact will your country be most involved in? What areas of the world (developing/developed nations) will your country target?
2. Will your plan rely on a large group of nations or will your solution be achievable through individual solutions for different nations? And what are the benefits of an international solution or a national solution?
3. Will your country continue to use the plans and foundations laid out by the United Nations or will your country focus more on a new solution that is most easily achieved by your country? And where will the funding for your country's solution come from?
4. How will you get landlocked countries in on an international solution and what are the impacts on all countries regardless of geographical locations? And will your solution tackle all problems or focus on one aspect of a much larger issue?
5. Many organizations have been made to combat marine pollution on a much smaller level, will your country attempt to work with these organizations/work off of what they have done? Or will your country be independent of other organizations?

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