



IAEA: Radioactive Waste Management and Preventing Nuclear Accidents

Hey Everyone! My name is Eric Nguyen and I'm going to be your head chair for the 2018 MVHSMUN conference. I am a current junior and I have been part of MUN for all 3 years. At school, I am part of the basketball program and am involved in a variety clubs, such as Key Club. Outside of school, I am an avid Venture Scout and I love going camping. Thanks for participating in our conference, and we hope that it is going to be a fun committee!

I'm Aidan Marx, your vice chair for the MVHSMUN 2018 conference. This is my first year of MUN. Along with participating in MUN, I am a member of the MVHS cross country team and I enjoy hanging out with friends. Have a great time at our conference!

The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose. It will seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.

Radioactive Waste Management

I. Background:

With the advent of nuclear technologies for energy there is a concern with its byproduct: nuclear waste. Countries with nuclear capabilities are tasked with the disposal of highly enriched nuclear waste. The removal of this waste is often difficult, as it must be buried underground to prevent leakage to the upper grounds. Because of this, land often must be allocated to dispose nuclear waste. It is vital for nuclear competent nations to dispose of nuclear waste in a sanitary fashion; nuclear radiation poisoning is a major threat to public health. Failure to dispose of radioactive waste leads to a global concern of it turning into nuclear weapons. HEU or Highly Enriched Uranium is a vital aspect of nuclear weapons and has to be stored and disposed of in



order to prevent terrorism. Common ways for disposing nuclear waste is to dig large holes and bury the waste underground.

The issue with the disposal of nuclear waste only pertains to a handful of countries. The nuclear competent countries include the United States, China, Russia, France, India, United Kingdom, Pakistan and a few others. In NPT countries (Non-proliferation treaty), waste is usually disposed of in a safe and sanitary manner. However, in politically unstable countries such as North Korea or Pakistan, the threat of nuclear waste being turned into nuclear weapons becomes a large issue.

II. UN Involvement:

Since their creation, the UN has searched for a way to eradicate nuclear weapons in an effort to maximize the safety of the world. The development of treaties, regimes and conventions created by the UN, all conjoin to serve one purpose: to eradicate nuclear weapons. One of the most prominent solution established by the UN, would be the Treaty of Non-Proliferation of Nuclear Weapons (NPT), which promotes the collaboration of nations towards prohibiting nuclear weapon technology, along with the peaceful use of nuclear energy. The treaty opened in 1968, and received 190 parties' signatures, five of which were the nuclear-weapon states. In addition to the NPT, the UN implemented the Partial Test Ban Treaty, (PTBT), and the Comprehensive Nuclear-Test-Ban Treaty, (CTBT) both of which further encouraged nuclear disarmament. Another very important treaty being considered is the Nuclear Weapons Convention, (NWC), and if adopted would ban the handling, developing, testing, transferring, or operating of nuclear weapons altogether. The IAEA (International Atomic Energy Agency) also regulates and inspects nuclear facilities throughout the world to prevent the weaponization of nuclear materials . To regulate



nuclear activity, all countries that follow IAEA policy which include: surveillance, inspections, and regulations to their nuclear facilities. Moreover, the UN has voted to outlaw nuclear weapons in 2017; embracing a resolution open to negotiations towards the treaty. Overall, the UN is doing all it can to abolish nuclear weapons entirely to prevent the utter destruction of the Earth.

As all nuclear weapons in the world are shared among five nations, a possible solution is to remove HEU (Highly Enriched Uranium) materials from these nuclear powerhouses and transform them into peaceful energy plants. These energy plants are to be located within the same country in order to prevent to proliferation of nuclear powers within countries. Nuclear energy plants could be under IAEA guidelines and subject to many inspections and placed under extreme regulations. The conversion of nuclear weapons to nuclear power is overall more effective than rather ridding of all nuclear weapons. Getting countries to sign the FMCT (Fissile Material Cutoff Treaty) is another effective way to limit and mitigate the amount of nuclear weapons produced. Through the FMCT, countries are restricted and prohibited from producing fissile material, which is crucial to the development of nuclear weapons.

III. Possible Solutions

As the issue of disposal of nuclear waste only pertains to a select few nations, a possible solution is to issue a mandate for the U.N. to regulate and make sure that waste is being disposed of properly. Through the assistance of the I.A.E.A, and stronger enforcement of the NPT, countries would be extremely regulated on how they dispose of their nuclear waste. International dump sites could also be proposed in areas with very low ecological impact. Countries would be free to dump their nuclear waste in these proposed areas which would be overseen by the international community and regulated. If a country violates a policy, several disciplinary actions could be taken



against them, such as a sanction conducted by the Security council. Neighboring countries should take action in making sure that nuclear waste is disposed of carefully.

V. Questions to Consider

1. Would your country use nuclear technology for peace or for war?
2. Has your country reached the capability of developing nuclear weapons?
3. Does your country currently have nuclear weapons, and if so, have they taken steps to reduce their nuclear stockpile?

V. Works Cited

"Fact Sheets & Briefs." *Fissile Material Cut-off Treaty (FMCT) at a Glance | Arms Control Association*. N.p., n.d. Web. 27 Nov. 2016.

"International Nuclear Information System (INIS)." *International Nuclear Information System (INIS) | International Atomic Energy Agency*. N.p., n.d. Web. 27 Nov. 2016.

"Nuclear Disarmament: History and Background." *NGO Committee on Disarmament, Peace and Security*. N.p., 06 Aug. 2013. Web. 27 Nov. 2016.

"Nuclear Weapons – UNODA." *UN News Center*. UN, n.d. Web. 27 Nov. 2016.

"Proposed Nuclear Weapons Convention (NWC)." *Proposed Nuclear Weapons Convention (NWC) | Treaties & Regimes | NTI*. N.p., n.d. Web. 27 Nov. 2016.

"Safeguards and Verification." *Safeguards and Verification | International Atomic Energy Agency*. N.p., n.d. Web. 27 Nov. 2016.

"Treaty on the Nonproliferation of Nuclear Weapons (NPT) – UNODA." *UN News Center*. UN, n.d. Web. 27 Nov. 2016.

"UN Votes to Outlaw Nuclear Weapons in 2017." *ICAN*. N.p., n.d. Web. 27 Nov. 2016.



Preventing Nuclear Accidents

I. Background:

Nuclear science has been a driving force in shaping the technology and weaponry developed by many countries nationwide. There have been over fifty-seven nuclear accidents worldwide since the Chernobyl disaster. In addition to Chernobyl, there have been many other nuclear disasters such as Fukushima, Three Mile Island, Enrico Fermi, and SL-1. In 2011, in Japan at the Fukushima Daiichi Nuclear Power Plant in Fukushima, a magnitude of 9.0 earthquake followed by a fifteen metre tsunami disabled three of Fukushima Daiichi. When the earthquake struck Japan, the reactors shut down immediately but they showed no significant damage. When the tsunami struck Japan, the reactors shut down releasing radiation killing over 100,000 people. All of these accidents were a result of a failure of some time in the systems at the power plants, which displays that although the technology is beneficial it is highly dangerous if not used with complete accuracy. However, not only is the technology an issue itself- workers at the power plants have also contributed to the disasters across the world due to user error of not listening to warnings from the systems. In 1986, a power plant in Ukraine was the product of a flawed reactor designed with serious mistakes made by plant operators. Nuclear technology is a threat to countries everywhere because it is very hard to perfect, and even with it perfected the risk of user error still remains. The accident destroyed the power plant and killed over thirty operators and firemen were killed within three months and several deaths later.

In order to prevent nuclear accidents, it would be ideal to either looking into restraints of nuclear technology; however, this act could infringe on a nation's sovereignty because limiting



nuclear technology in all nations could be seen as repression of the freedom to develop technology. Limiting this technology would also limit the nuclear weapons produced by countries that have access to this kind of technology, which could be seen as more unfair limitation yet would make nuclear technology less of a presence overall. Although the risk of nuclear accidents are generally low, it should be noted that the effects of a nuclear disaster are far more extreme than those of lesser technology.

II. UN Involvement:

Since the accident in Fukushima, the UN has taken precautions and has asked that countries with nuclear plants to take extra precautions when working on the nuclear plants. The international community has adopted the IAEA action plan to strengthen nuclear safety. The action plan includes an agreement “stress test” of nuclear power plants in all countries with nuclear programs. Despite the accident in Japan, number of operating nuclear reactors in the world will continue to grow in the coming decades. Three months after Fukushima, the IAEA held the Ministerial Conference on Nuclear Safety for the first time in history. This conference aimed to focus on the mistakes of Fukushima so the world could learn from this disaster and improve the still-standing nuclear power plants globally.

On a broader scale, the IAEA has a main focus of keeping nuclear energy safe and secure through the Inter-Agency Committee on Radiological and Nuclear Emergencies - IACRNE. This committee has established an international framework to watch over the information and processes that must be advised during a nuclear or radioactive disaster. It basically has a protocol for nuclear accidents and response, but it doesn't actually prevent them from happening. It focuses on preparation for a disaster so that way the response when disaster strikes will be beneficial.



III. Possible Solutions:

There are only so many ways that nuclear disasters can really be stopped, and this is by halting use of nuclear power. However, since nuclear power is so useful and comparatively clean and better for the earth, it would be hard to halt all use. Instead of stopping the use of this energy, a solution to nuclear accidents could be reducing the amount of nuclear technology used without stopping it all together. A universal regulation would be ideal, but seeing as this is hardly fair to countries that have more access than others, countries should be evaluated individually to find the proper regulation that suits their size and abundance of nuclear energy. This wouldn't really stop nuclear accidents, but it would lessen their threat.

Another solution is to look for new ways to use nuclear energy so that the nuclear power is more confined-basically, only using nuclear power in locations that are isolated from the environment. This could be done by improving the security of nuclear power plant infrastructure and rebuilding the infrastructure with material that is more suitable to withstand nuclear power.

IV. Questions to consider:

- 1) What are some ways your country can prevent nuclear accidents?
- 2) If your country has had nuclear accidents before, what have you done to reinforce safety precautions?
- 3) What is your country's thoughts on nuclear plants?
- 4) What is your country's thoughts on nuclear energy as a whole and how much do you use it?

V. Work Cited:



“The Nuclear Non-Proliferation Treaty.” *The Nuclear Non-Proliferation Treaty* | Center for Strategic and International Studies, www.csis.org/analysis/nuclear-non-proliferation-treaty.

Fukushima Accident - World Nuclear Association,
www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/fukushima-accident.aspx.

Blustein, Paul. “Much of What You’ve Heard About the Fukushima Nuclear Accident Is Wrong.” *Slate Magazine*, 26 Sept. 2013,
www.slate.com/articles/health_and_science/science/2013/09/fukushima_disaster_new_information_about_worst_case_scenarios.html.

“International Atomic Energy Agency (IAEA).” *IAEA Ministerial Conference on Nuclear Safety*, www-pub.iaea.org/iaeameetings/42466/IAEA-Ministerial-Conference-on-Nuclear-Safety.

“A Brief History of Nuclear Accidents Worldwide.” *Union of Concerned Scientists*,
www.ucsusa.org/nuclear-power/nuclear-power-accidents/history-nuclear-accidents#.WgMfS7bMz-Y.