

Montessori Model United Nations

MMUN 2012



International Atomic Energy Agency

Dear Delegates,

It is a pleasure to welcome you to the 2012 Montessori Model UN and specifically to the United Nations International Atomic Energy Agency, commonly referred to as the IAEA. The following pages intend to guide you in the research of the topics that will be debated at MMUN 2012 in committee sessions. Please note - this guide only provides the basis for your investigation. It is your responsibility to find as much information necessary on both the topics - how they relate to the country you represent. Such information should help you write your Position Paper, where you need to cite the references in the text and finally list all references in the MLA format.

The MLA format may or may not be strictly adhered to in this Background Guide because the primary purpose is to provide you the initial launching pad to pursue your research on the two topics. The more information and understanding you acquire on the two topics, the more you will be able to influence the Resolution writing process – through debates [formal and informal caucuses], and the MMUN experience as a whole. Please feel free to contact me if and when you face challenges in your research or formatting your Position Papers.

We encourage you to learn all you can about your country first with regard to the two selected topics and both committee members need to be well versed in each topic.

Enjoy researching and writing your Position Papers. We look forward to seeing you in New York!

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MONTESSORI MODEL UNITED NATIONS 2012



History:

United States President Dwight Eisenhower's speech to the United Nations General Assembly, Atoms for Peace, sparked the formation of the International Atomic Energy Agency (IAEA) as an independent intergovernmental forum and consultative body. On October 23, 1956 the Statute was approved and enforced following year in July 29, 1957. The primary goal and stated mission of the IAEA is to work toward the goal of, "safe, secure and peaceful uses of nuclear science and technology." With growing concern over the development of nuclear energy and technology, many world leaders, including the United States and many in Europe, have expressed a strong desire for an international system to govern and establish a foundation for controlling the spread of nuclear energy. With the rapid expansion of nuclear power for civilian uses, the IAEA has become increasingly important.

Purpose:

The IAEA operates in two ways:

1. It is a technical body, consisting of thousands of experts and consultants to assist governments in developing and implementing safe nuclear practices.
2. It is a watchdog agency, promoting the development of peaceful uses of nuclear technology, and at the same time, limiting any potential nuclear weaponry.

It is in the second capacity that the IAEA is better known. The IAEA conducts regular inspections of nuclear installations as a way to control the development of nuclear technology for weaponry; this agency makes sure that plants producing energy are not also producing weapons. At the same time, the IAEA also ensures and makes recommendations for the security and safety of nuclear plants. The agency uses the immense knowledge base of its members' to create guidelines for all aspects of the nuclear industry.

Membership:

Originally, the IAEA consisted of 81 members; today the IAEA has expanded to its current membership to 157. It serves as one of the most respected intergovernmental organizations currently in the international system.

The organization of the IAEA is divided into the:

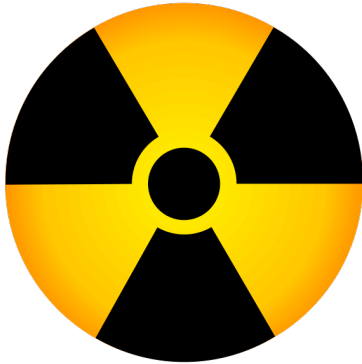
- General Conference
- The Board of Governors
- The Secretariat

All nation members belong to the General Conference. The General Conference serves as the ultimate policy body for the Agency.

The Board of Governors has 30 members who are elected from the General Conference. This group drafts and makes recommendations to the General Conference.

The Secretariat, under whom is the leadership of the IAEA, is responsible for carrying out the charges of the Agency as well as the day to day operations and inspections.

Topic I: Nuclear Safety Standards and an All-Pervasive Safety Culture



Introduction:

The inherent risks of dealing with radioactive material have been present since the founding of the IAEA, and these risks have formed the backbone of the projects and efforts of this agency. Safe handling and use of fissile material has been at the forefront of the IAEA, as well as the subject of many international treaties and declarations. Recent events and advances in technology have determined a need for even greater involvement of the international community to ensure the continuing progress towards a safe (or safer) world with nuclear security.

Fissile material gives off a substance known as radiation, and radiation damages the cells of human and other living things. Needless to say, it is important and essential that the effects of radiation be controlled or avoided entirely. Though technology and advancement in the understanding of radioactive materials has increased since the discovery of nuclear technology, the use of common standards has lagged behind. At best it has been uneven. Since the potential side effects of radiation can cross national borders, international cooperation is required to ensure a sufficient level of global security.

Background:

The current major international convention guiding the global dynamic on nuclear safety comes in the form of the Convention on Nuclear Safety (Convention). It was adopted on June 17, 1994 in Vienna. This treaty lays out a set of standards for contracting parties (nations) to adopt in the form of national legislation. This national legislation creates as a mechanism for ensuring adequate nuclear safety and security. A system of benchmarks is employed as an effort to hold member states highly accountable by providing a legal framework. Included in these benchmarks are many of the aspects of the IAEA Fundamental Safety Provisions.

The nine principles are:

1. Responsibility for safety
2. Role of government
3. Leadership and management for safety
4. Justification of facilities and activities

5. Optimization of protection
6. Limitation of risks to individuals
7. Prevention of accidents
8. Emergency preparedness and response
9. Protective actions to reduce existing or unregulated radiation risks

These principles are intended to protect the people and environment against radiation risks and secure nuclear facilities that give rise to those risks.

Further, the convention seeks to additionally (aside from increasing international cooperation) prevent any incidences of radiological contamination through adequate planning and defenses. It works to lesson or mitigate the consequences of contamination should such an incident occur. The two major concerns in avoiding a nuclear disaster as well as are providing security and safety are:

1. Adequate planning to avoid any accident from occurring
2. Responses to an accident aimed at mitigating damage

Possible Solutions:

The Convention has served as the primary source of international guidance on the subject of nuclear safety and security. It seeks:

- 1) To achieve and maintain a high level of nuclear safety worldwide through the enhancement of national measures and international co-operation including, where appropriate, safety-related technical co-operation;
- 2) To establish and maintain effective defenses in nuclear installations against potential radiological hazards in order to protect individuals, society, and the environment from harmful effects of ionizing radiation from such installations;
- 3) To prevent accidents with radiological consequences and to mitigate such consequences should they occur.

However, the IAEA operates on an incentive based system in the belief that all member states should work to promote international nuclear security as a means of bolstering national safety. A peer review mechanism provides for contracting parties to submit reports on the to each other, and these reports are supervised and administered by the IAEA. However, there is no force of law to compel members who are not in compliance with their obligations to maintain a set of safety standards other than international embarrassment. This annual review allows for contracting parties who are lagging behind in safety to seek the expertise and assistance of other members and the IAEA. As a result, the Convention purports itself to be “an innovative and dynamic” solution to addressing the concerns of nuclear safety.

Many have been more forward in pressing for greater international cooperation and training in safety standards in order to promote a culture of safety. This culture would create an atmosphere that would hold the highest regard for the standards of safety and security and, at the same time, guard against complacency and potential overconfidence. These regimens can be viewed as a basis upon which a common level of safety can be expected, even though many acknowledge that the, “largest single internal factor determining the safety of a plant is the culture of security among regulators, operators and the workforce — and creating such a culture is not easy.”

Indeed, cultural factors regarding nuclear security can hamper efforts to create an international regime to control safety standards.

Additionally, the results of the environment and global climate change have been significant for both the safety and the security of nuclear installations throughout the world. Many nuclear facilities are based near major bodies of water because of the constant need for water to cool the reactors that generate heat and electricity. Therefore, the resulting major changes in climate have forced what would have otherwise been secure facilities with acceptable levels of risk into territory that is no longer deemed safe. The threats of hurricane, tsunami, or other natural disaster have increased the likelihood and risk of a nuclear incident. Therefore additional steps need to be taken in order to bolster the defenses of those plants that have strayed into potentially dangerous situations. These could include additional protocols, measures to increase monitoring, managing of older nuclear facilities, streamlining responses to worst-case scenarios, and improving communications during emergency situations.

Another major concern of promoting nuclear safety is the aging population of nuclear scientists. During the 5th review meeting of the Convention, many contracting parties expressed the concern at the lack of qualified and well-educated nuclear experts. These experts are essential to ensure that overall safety and security are maintained and sustained throughout the life of a nuclear facility. A lack of these individual makes it difficult to operate a nuclear plant safely.

Research Questions:

- (1) Is this issue a problem in your country/ neighboring countries/ continent?
- (2) Who and what are the stakeholders regarding this issue?
- (3) What are the positions of the various stakeholders on this issue?
- (4) What strategies/solutions have been attempted?
 - (a) What has worked? Why?
 - (b) What has not worked? Why?
 - (c) What could be improved? Why?
 - (d) What new need to be introduced? Why?
- (5) How this problem has/is affecting your country/ neighboring countries/ continent/ world?
- (6) If this issue is not a problem in your country, then how can they be involved?
 - (a) Why and why not?
- (7) What and how can children like you be involved in the prevention and occurrences of the issue?
- (8) What are some facts, figures, statistics regarding the issue – national, regional, international?

Summary:

The issue of security and safety in nuclear facilities is not a new problem, since it is one that has been present since the establishment and discovery of nuclear technology. Though the exact concerns of nuclear safety have changed little since they began, the varied needs and situations of each individual nuclear plant makes

establishing a uniform regime difficult. Further, global climate change makes previously secure plants more vulnerable to natural disaster and incidence of nuclear accident. Many governments and populations have become much more wary of the use of nuclear plants as a viable means of generating power, some going as far, as in the case of Germany and many other European nations, of banning the creation of any new power plants for the foreseeable future.

The conduct of periodic safety reviews of plants can help increase safety in the short to midterm. Long-term concerns include the declining level of qualified experts in nuclear science and technology.

Reading/Research References:

<http://www.iaea.org>

<http://www-ns.iaea.org/>

<http://www-ns.iaea.org/conventions/nuclear-safety.asp?s=6&l=41>

<http://www-ns.iaea.org/meetings/ni-summaries/cns-5th-rev-mtg-2011.asp?s=6&l=41>

Topic II: Fallout from Fukushima Daiichi



Introduction:

On March 11, 2011, a massive 9.0 magnitude earthquake struck off the Japanese coast causing massive damage across northern Japan and triggered an equally devastating tsunami. Despite the immense physical and monetary damage, the result of the earthquake and its subsequent tsunami created what Arnold Gunderson, a nuclear expert who testified at the 3-mile accident stated, "Fukushima is the biggest industrial accident in the history of mankind." The subsequent nuclear crisis caused by the damage to the plants 6 nuclear reactors has been one of the greatest disasters since the discovery of nuclear technology.

History:

The Fukushima Daiichi nuclear power plant was first commissioned in 1971 with 6 Light Water nuclear reactors with electric powered water cooling pumps. It was ranked

in the top 15 largest nuclear generated power facilities in the world with an estimated output of 4.7 GWe. Fukushima Daiichi was designed to generate power for the Fukushima and surrounding prefectures as the primary source of power. The safety and situation of the plant were consistently ranked as the most at risk of all of Japan's nuclear power plants and in 1990, the US Nuclear Regulatory Commission posited that the most likely emergency scenario would be a catastrophic failure of the reactor coolant systems resulting from a loss of electrical power. When the earthquake struck on March 11, 2011, the resulting tsunami was measured to be over 14 meters high, but the plant was only designed to withstand a wave measuring 6 meters.

The resulting nuclear crisis occurred when the water coolant system failed after power was lost to the pumps that supplied fresh water to cool the reactors. In 4 of the 6 reactors, a partial meltdown occurred after nuclear technicians were unable to adequately cool the reactors and also 2 of the 6 reactors experienced explosions as a result of the buildup of hydrogen gas in the plants waste systems. (For a full timeline of the events and crisis during the aftermath of the March 11, 2011 earthquake, please see the suggested reading below) On the International Nuclear Event Scale, the Fukushima Daiichi incident has ranked the highest level of 7 on a scale of 1 to 7, indicating a "major release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures." The only previous use of the level 7 rating was for the Chernobyl incident nearly 25 years earlier. The severity of the incident has called into question the overall mission and the competency of the IAEA and its ongoing charge of promoting the safe use of civilian nuclear energy.

Possible Solutions:

The fallout from the incident in Fukushima has led some to call for a review of the IAEA operating procedures regarding the safety inspections and for the IAEA to take a more active role in promoting and implementing security measures to avoid nuclear accident. Currently the IAEA relies on national regulatory agencies to carry out the safety measures that the IAEA recommends. As a result there have been increased calls for the IAEA to be more stringent and more hands on in both the application of regulations but also in their inspections of nuclear facilities to ensure compliance with the guidelines. Further, the response time to the crisis took over a week before the IAEA sent a team to investigate the situation. Again, the IAEA relies on the self-reporting of member states for official action, which many have deemed incapable of dealing with the gravity of the situation when dealing with gravity of a potential nuclear crisis. With a major charge of the IAEA being promoting the safe and productive use of civilian nuclear technology, the calls of competency in regards to the IAEA have seriously degraded the image and ability of the IAEA to carry out its goals.

Further, the ongoing health concerns as a result of the disaster at Fukushima Daiichi will stretch into several decades, and indeed generations into the future. The World Health Organization has already announced a minimum 20 year study into the long term effect the irradiated discharge from the plant on Japanese ecosystem and population. Discharge from the reactors and the subsequent explosions and release of radioactive particles into the atmosphere will continue to pose health and safety concerns for many years into the future.

The IAEA Director General, Yukia Amano has called for a conference to assess the lessons from Fukushima and recommend the role of the IAEA and future response mechanisms. Included to be discussed is the review of nuclear facilities around the world and a continuation of the safety provisions already in place.

Research Questions:

- 1) Is this issue a problem in your country/ neighboring countries/ continent?
 - a) Who and what are the stakeholders of this issue?
 - b) What are the positions of the various stakeholders on this issue?
 - c) What strategies/solutions have been attempted?
 - i) What have worked? Why?
 - ii) What have not worked? Why?
 - iii) What could be improved? Why?
 - iv) What new need to be introduced? Why?
- 2) How this problem has/is affecting your country/ neighboring countries/ continent/ world?
 - a) If this issue is not a problem in your country, then how can they be involved?
 - i) Why and why not?
- 3) What and how can children like you be involved in the prevention and occurrences of the issue?
- 4) What are some facts, figures, statistics regarding the issue – national, regional, international?

Summary:

The fallout from Fukushima Daiichi has not only called into question the role and efficacy of the IAEA, but also on the safety of the nuclear industry in general. With the increased risks resulting from global climate change and the threat of natural disaster, the worldwide concerns with regards to nuclear power generation has been greatly increased. The worst nuclear disaster since Chernobyl has indeed opened eyes to the concerns of safety. Though the events of Fukushima will be burned into history, the route must be conducted with a review of not only the role of the IAEA and its relation to its member states, but also of the role of the Agency in general.

Reading/Research References:

- <http://www.iaea.org/newscenter/news/tsunamiupdate01.html> (IAEA Accident Log)
- http://topics.cnn.com/topics/fukushima_daiichi
- http://www3.nhk.or.jp/daily/english/20_11.html
- http://www.iaea.org/newscenter/news/2011/progress_at_fukushima.html