



**Mission Viejo High School Model United Nations**  
**29<sup>th</sup> Annual Conference**  
***“Through the Fire the Spirit is Forged”***

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IAEA

Nuclear Safety in Response to the Fukushima Crisis

**I. Background of Topic**

Nuclear energy has increasingly become an efficient source of power. With over 450 nuclear power plants within 40 countries, nuclear energy is supplying 20% of the world's energy supply. Nuclear power has been the solution to today's power needs; however, nuclear energy can present many dangers. The meltdown in the Chernobyl power plant in Ukraine in 1986 caused 56 deaths and its aftermath is still sensed today. The main problem is that in any process of creating nuclear power, Uranium-238 is enriched in the process of nuclear fission. Energy is harnessed from the reactor while the byproduct Uranium-235 is left over. Uranium-235 is unique because it has a much longer half-life compared to other isotopes of similar mass. Uranium-235 has a half-life of 700 million and is not disposed easily. In addition Uranium-235 releases the poison asphyxiates that radiates food and the water supply if not disposed properly. According to the United States Environmental Protection agency, 10,000 years of isolation is required for Uranium-235 to have safe levels of radioactivity. Today the international community almost experienced another Chernobyl incident in the Fukushima crisis. Following the Japan earthquake on March 11, 2011 the Fukushima nuclear reactors automatically turned itself off due to critical conditions caused by the earthquake and tsunami. Although the system was turned off, the reactor was still producing heat because the cooling system was turned off. The backup generators could not produce electricity for the cooling pumps because the tsunami flooded and short circuited the



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diesel generators. As a result, the reactors reached near critical levels and the world was in another nuclear crisis. The after effects of the incident are still lingering today.

The radiated particles of the Fukushima event were easily transferred over foreign seas thousands of miles away though the wind current and the difficult nature of disposing radiated particles. The neighboring countries China, Democratic republic of Korea, Republic of Korea, Vietnam, the Philippines, and even the United States reported increase radiation levels

This is a global issue because radiation is known to cause not only irradiated food, but also cause cancer, shorter life spans, and birth defects. Both the Chernobyl meltdown and the Fukushima crisis were avoidable if the proper procedures to deal with nuclear crisis were established at the time.

## **II. UN Involvement**

After the nuclear arms race from the cold war and the genesis of the Atomic era, the IAEA was established to regulate and promote peaceful nuclear power. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was adopted on 12 June 1968 was to limit any further spreading of nuclear weapons and to promote peaceful uses of nuclear energy. Even with the restrictions, refining uranium for nuclear energy and disposing nuclear waste are still dangerous today. The Comprehensive Test Ban Treaty (CTBT) was adopted on 10 September 1996 to ban all nuclear weapon test explosions and it also established the International Monitoring System (IMS) for inspections for nuclear power plants.



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Although nuclear plants are being regulated by the IMS and follow protocol established in the NPT and CTBT by the IAEA, nuclear plants still get away with hazardous environments through loopholes and by meeting the minimum requirements.

### **III. Possible Solutions**

Many of the proposed solutions for future nuclear safety are technologically or economically impossible. Proposals such as mass evacuation are too idealistic and unlikely to happen. A more realistic long term solution would be prevention. In the past, countries have tried to install multiple backup systems such as the emergency cooling systems in order to prevent major meltdown from occurring in a nuclear power plant. In addition, workshops and training centers were created to prepare workers for any disaster related problems. In the case of an actual disaster, a well-rehearsed protocol should be implemented to lessen the effects of the meltdown. Although it is impossible to shorten the decay period of radiated particles, it is possible to decrease the spread of it. In the long term, research should be done to find out what is the optimal container to prevent the leakage of radioactive material. To protect the well-being of the people, protective radiation suits or bunkers should be developed in the event that mass evacuation is not possible. A well informed nation would also be more likely to survive and avoid nuclear meltdown. Education through media and prevention is essential in nuclear safety.



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#### **IV. Bloc Positions**

Western Bloc: With more successful and safer power plants, the Western Nations sent specialists to examine and develop better cooling systems for Japan’s unstable power plants

Asian Bloc: Japan since the earthquake and tsunami has been working to decrease the radiation level to pre-meltdown levels while others countries such the DPRK and ROK are ambivalent towards sending aide and supplies.

Latin Bloc: After witnessing Japan’s nuclear crisis, the Latin Bloc is reconsidering if it should use nuclear power at all for its own countries.

Middle Eastern Bloc: Since the demand for energy has increased due Japan’s energy crisis, the Middle East has raised their prices for oil and energy. Although the Middle Eastern Bloc receives a fair portion of energy from Japan, the countries are benefiting due to Japan’s crisis.

African Bloc: Africa is reconsidering its nuclear energy policy due to the increased concerns about the dangers nuclear meltdown can create.



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**V. Guiding Questions**

1. Future problems could be solved by prevention but what can help alleviate the current problems of the disposal of radioactive material?
2. What should be done to protect the safety of the people?
3. Should dependence on nuclear energy stay the same or decrease?
4. Where should radioactive material be disposed?
5. Is there a way to decrease radiation in large area?
6. What should other countries that have nuclear power do to prevent a crisis like the one in Fukushima to occur again?

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