

### **Committee Background, Introduction, and Description**

The International Atomic Energy Agency (IAEA) was founded in 1957 in order to control the discoveries of nuclear energy. As nuclear energy was expanding this agency was controlled in order to control this source that was used to build weapons and useful tools. On December 8 in 1953 President Eisenhower proposed the idea of “Atoms for Peace” on the General Assembly in the United Nations. Suddenly the IAEA started to get its shape and when proposed to the UN, 81 countries approved the formation of the IAEA. Nuclear verification and security, safety and technology transfer are the three pillars of the IAEA. The IAEA started to play an active role with the Cuban missile crisis. In 1961 they opened their first laboratory for nuclear purposes, and it was located in Seibersdorf, Austria. Their mayor concern was that countries were rapidly creating nuclear programs, and they were trying to limit that. It started to take an active role in countries after approving the Treaty on the Non-Proliferation of Nuclear Weapons. In 1988 the Agency started to unite with other UN branches such as the Food and Agricultural Organization. Many years after many countries were going against the treaty proposed by the agency so in 1995 the treaty was made permanent. With this treaty they also started to gain control of the use and storage of nuclear material. Currently the Agency is led by Mohamed ElBaradei and six Deputy Directors General. Most of the people in the Agency work in the IAEA headquarters which is in Vienna, Austria. Other agencies are located in Toronto, Tokyo, New York, Geneva, and labs located in Seibersdorf and Monaco. IAEA is divided into 6 agencies which are management, nuclear sciences and applications, nuclear energy, nuclear safety and security, technical cooperation, and safeguards and verification. Their work consist of several activities such as the inspection of nuclear material, projects that provide water to countries, preventing the spread of nuclear waste that can cause several diseases, and provide safe environment in nuclear power plants.

### **Description and Definition of the Issue**

Several countries use radioactive materials in their nuclear projects. This is a very complicated project that involves dangerous material. Once the project is finished there are many left over substances. Whether the project is for weaponry purpose or for improving techniques that we use every day there is always a radioactive substance that is left. Now many may ask what they do with this material. This is the issue that will presented in this committee. This material that is left over is dangerous and can kill every living thing. So we are trying to find the most appropriate and safe way of dealing

with this left over material. We want to find a safe in way in which this material can be disposed without hurting any human life. There have been many cases in which this material has ended up hurting the environment, and causing several diseases in humans. So basically we want to find a way of either storing or getting rid of this radioactive material without causing harm what so ever.

### **History of the Topic**

After a nuclear project is finished the left over material is stored in engineered storage facilities. Countries are looking for a destination of this material. No solution has been found; they just let this material to dispose. It is expected that by the year 2020 there will be a solution for this problem. "Disposal deep in geological formations" is what countries want to reach. Countries want to create these facilities with as much security as possible. The basic problem is how?

### **Case Studies**

The Goiânia accident of 13 September 1987 contaminated this place and everyone in the community was affected. There wasn't much discussion with this incident but the major problems that were later on discussed were on dosimetric, decontamination, and medical aspects.

The Chernobyl disaster (Ukraine) is one of the major if not the worst nuclear accident. This was due to the power excursion that destroyed a reactor. The problem was when all the radioactive material reached several communities. Among some of the consequences were the destruction to the environment, numerous cases of people with thyroid cancer, health disorders, and death of many. Nuclear rain reached most of Europe including Ireland. Studies have been made to prevent this incidents from happening. This can relate to the topic not because of the disaster, but the effect of the disaster. Through this studies were made that concluded that in order to avoid this effects there should be secure power plants and also important storage places of nuclear waste because if that gets out of control they don't want another disaster like the one in Ukraine.

### **Possible Solutions**

- Reliable engineered release barriers such as containers and other barriers.
- Geological disposal that protects the material, this should all be done with a geological environment.
- Waste should be put in a deep geological setting, preferably granite. They want to keep the waste there up to a point that the material decomposes and it's no longer a threat for humans.

## **Important Questions**

Based on the resources that we have available, what are some ways that nuclear waste can be stored, without the cost being high?

Based on what happened on Ukraine, should power plants be only in places that are from human contact?

If a nuclear disaster were to happen, what preventive methods can be created to stop the dispersion of the nuclear material?

## **Bibliography**

- Louvat, Didier. "Technical Meeting on Remediation Strategies and Long Term Management of Radioactive Waste". IAEA. October 2007 <[http://www-pub.iaea.org/mtcd/meetings/PDFplus/2007/TM33545/TM33545\\_Announcement.pdf](http://www-pub.iaea.org/mtcd/meetings/PDFplus/2007/TM33545/TM33545_Announcement.pdf)>.
- Laaksonen, Jukka. "IAEA General Conference Scientific Forum 2007". IAEA. September 18, 2007 <[http://www-pub.iawa.org/MTCD/Meeting/PDFplus/2007/cn159/cn159\\_Laaksonen.ppt](http://www-pub.iawa.org/MTCD/Meeting/PDFplus/2007/cn159/cn159_Laaksonen.ppt)>.
- Picot, Cynthia. "Sustainable solutions for radioactive waste". [http://www.oecdobserver.org/news/fullstory.php/aid/531/Sustainable\\_solutions\\_for\\_radioactive\\_waste.html](http://www.oecdobserver.org/news/fullstory.php/aid/531/Sustainable_solutions_for_radioactive_waste.html)
- "Chernobyl Accident". World Nuclear Association. April 2009 <<http://www.world-nuclear.org/info/chernobyl/inf07.html>>.