# Fukushima Nuclear Power Plant Crisis

*FWPMUN IV: February 1, 2020*


**Head Chair:** Celia Rattner

**Assistant Chairs:** Mia Bronstein, Sophia Rosenkranz

## Letter from the Chair:

Hello delegates,

My name is Celia Rattner. I'm a senior at Francis W. Parker, and I will be serving as your Head Chair in the Fukushima Nuclear Power Plant Disaster crisis committee. I joined MUN two years ago and have loved every second of it, from my weekly in-school symposia to seeing out-of-school friends at regional conferences to travelling to Dubai with my school delegation last March. MUN is a fantastic way to enhance one's public speaking skills and become more knowledgeable about pressing foreign issues. At the end of FWPMUN IV, I hope that newer delegates leave with a more concrete understanding of MUN and a newfound confidence in their performance as delegates, and more seasoned delegates walk away with a stronger sense in their abilities and a greater understanding of an ongoing issue that has affected millions of people.

As this is a crisis committee, delegates will have to be flexible and adaptable to any crises that might be thrown their way. Negotiation and communication with other delegates is essential for producing thoughtful solutions to the problems at hand. The Fukushima Power Plant crisis is a wildly interesting and complex topic, requiring collaboration and compromise from all involved parties. Don't be afraid to speak up for what your position believes in. New ideas are welcomed with open arms! While frequent participation is encouraged, delegates should be mindful of the motions they are proposing or directives they are submitting and whether these choices advance the discussion. The best delegate is not the one that speaks the most, but rather adds flare and creativity to the debate.

For any questions or concerns, you can email me at crattner@fwparker.org. Good luck with your research—I can't wait to see you all on February 1st at FWPMUN IV!

Sincerely,
Celia Rattner

## Committee Description:

The Fukushima Daiichi Nuclear Power Plant crisis committee is an original committee designed to deal with the immediate and long-term consequences of the worst nuclear disaster in history. In this committee, members will be forced to come up with comprehensive solutions for clean-up of the nuclear disaster, providing care for affected civilians, and implementing future regulations for nuclear power programs, among other issues. The committee—comprised of members of the Japanese government—has the power to decide upon initial actions to take and determining the finances of the recovery process. While in committee, delegates will be presented with obstacles facing the progress of recovery and must be flexible and creative in coming up with viable solutions. For the purpose of creating a more realistic simulation, each hour of debate will mark a passing month.

## History of the Issue:

On March 11, 2011, a 9.0 magnitude earthquake rocked eastern Japan, resulting in a 15 meter tsunami, which added immensely to the damage already done by the earthquake. The International Nuclear Event Scale (INES) ultimately declared the accident at Fukushima a "Level 7" emergency.[1] Nearly 30 years prior, the largest nuclear disaster in history occurred at the Chernobyl Nuclear Power Plant north of Kiev, Ukraine in 1986, which killed nearly 31 people due to radiation exposure and affected tens of thousands of others. Eleven nuclear reactors at four nuclear power plants in the region were operating at the time and all shut down automatically when the earthquake struck.

The Fukushima Daiichi facility, operated by the Tokyo Electric and Power Company (TEPCO), comprised six boiling-water reactors constructed between 1971 and 1979. At the time of the accident, only the first three were operational. Reactor 4 was temporary storage for spent fuel rods.[2] When seismic activity was detected, the emergency shut-down feature (SCRAM),

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[1] *The Official Report of the Fukushima Nuclear Accident Independent Investigation Committee*. 2012, *The Official Report of the Fukushima Nuclear Accident Independent Investigation Committee*, https://www.nirs.org/wp-content/uploads/fukushima/naiic_report.pdf.

[2] The Editors of Encyclopaedia Britannica. "Fukushima Accident." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 13 Mar. 2018 www.britannica.com/event/Fukushima-accident.

went into operation.[3] The backup generators were initially damaged by the earthquake, but the crux of the issue lay with reactors 1, 2, and 3.

Although these three reactors were successfully shut down after the earthquake and tsunami, the loss of power caused each of their cooling systems to fail within the following days. The fuel rods in reactors 1, 2, and 3 overheated and partially melt down as a result of rising residual heat in each reactor's core. This led, at times, to the release of radiation. Some of this melted material fell to the bottom of the containment vessels in reactors 1 and 2, creating sizable holes in the floor of each vessel and partially exposing the nuclear material in the reactors' cores. These holes exposed the nuclear material in the cores of the reactors. The buildup of pressurized hydrogen gas in the outer containment buildings caused explosions in reactor 1 on March 12 and in reactor 3 on March 14. Workers pumped seawater and boric acid into the cores of the reactors 1, 2, and 3 to cool and stabilize the reactors. On March 15, a third explosion occurred in the building surrounding reactor 2. The explosion, combined with a fire caused by rising temperatures in spent fuel rods stored in reactor 4, led to the release of higher levels of radiation from the Fukushima plant.[4]

**Legal History of Nuclear Energy**

International nuclear law is currently maintained by the International Atomic Energy Agency (IAEA) and is defined as "the body of special legal norms created to regulate the conduct of legal or natural persons engaged in activities related to fissionable materials, ionizing radiation and exposure to natural sources of radiation."[5]

The international nuclear law underwent significant modifications following the Three Mile Island accident in Pennsylvania, USA in 1979 and the Chernobyl disaster in Ukraine in 1986. Following Chernobyl, two conventions—the Convention on Early Notification of a

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[3] *The Official Report of the Fukushima Nuclear Accident Independent Investigation Committee*. 2012, *The Official Report of the Fukushima Nuclear Accident Independent Investigation Committee*, https://www.nirs.org/wp-content/uploads/fukushima/naiic_report.pdf.

[4] The Editors of Encyclopaedia Britannica. "Fukushima Accident." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 13 Mar. 2018 www.britannica.com/event/Fukushima-accident.

[5] Handbook on Nuclear Law. *International Atomic Agency, Stoiber, Carlton; Baer, Alec; Pelzer, Norbert; Tonhauser, Wolfram.* Implementing Legislation, , IAEA, Vienna, Jul. 2003. https://www-pub.iaea.org/MTCD/publications/PDF/Pub1160_web.pdf

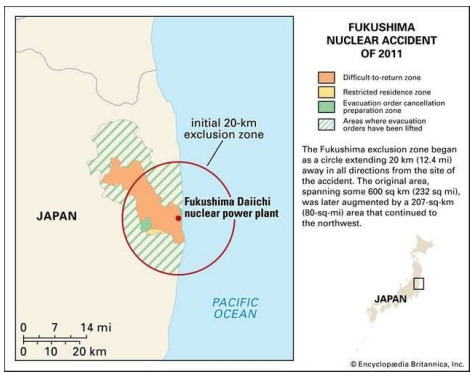
Nuclear Accident (the Early Notification Convention) and the Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency (the Assistance Convention)—were negotiated, in which multilateral agreements were enacted due to Chernobyl's trans-border nature.[6]

## Explanation of Issue:

Our committee will be debating two main topics relating to the explosion at the Fukushima Daiichi plant: immediate action to take to stabilize the situation and protect citizens, and future regulations to implement in order to avoid a similar catastrophe. While these topics may have intertwining subtopics, it is important to come up with comprehensive solutions to each of them.

**Immediate Action To Take:**

In the days following the earthquake and tsunami, a number of explosions in reactors within the Fukushima Daiichi nuclear plant occurred. As a result, tons of harmful chemicals, most notably radiation and iodine-131, are being released into the atmosphere.[7] The first order of business is to stabilize the plant so that the release of harmful chemicals into the surrounding environment is halted. A way to cool the reactors must be configured, as the overheating of the reactors is a direct cause of the multiple explosions. The Japanese government should consider whether to declare a state of emergency or a nuclear emergency. The committee must also declare a radial area of evacuation for the surrounding areas to ensure that nearby residents are not severely affected by the chemicals being released from the plant. The




[6]"Nuclear Law After Chernobyl: A Step in the Right Direction?" *LawTeacher*, 2 Feb. 2018, www.lawteacher.net/free-law-essays/international-law/nuclear-law-after-chernobyl-a-step-in-the-right-direction-international-law-essay.php.

[7] The Editors of Encyclopaedia Britannica. "Fukushima Accident." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 13 Mar. 2018 www.britannica.com/event/Fukushima-accident.

committee should consider crops that are potentially affected by the radioactive material and consider recalling certain items or notifying the public about the dangers of consumption. Last, the body must come up with a comprehensive plan for environmental clean-up, allocating enough money and resources to effectively decontaminate surrounding environments, as the radiation will affect regional plants and wildlife..

**Future Regulations:**

In order to prevent other lethal catastrophes, the body must create legislation that tackles the root causes of the Fukushima disaster: the strength of individual reactors, poor natural disaster-resistant infrastructure, and insufficient countermeasures. As part of the reevaluation of the nuclear plant, the committee should meet these points:

1. Existing laws should be consolidated and rewritten in order to meet global standards of safety, public health, and welfare.
2. The roles for operators and government agencies involved in emergency response activities must be clearly defined.
3. Regular monitoring and updates must be implemented in order to maintain the highest standards and the highest technological levels of the international nuclear community.
4. New rules must be created that oversee the operations of old reactors, and set criteria to determine whether reactors should be shut down.[8]

In conclusion, the regulations implemented should pay attention to the location of nuclear reactors (proximity to coastlines, fault lines, and residents) and the infrastructure of the plants to resist natural disasters.

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[8] *The Official Report of the Fukushima Nuclear Accident Independent Investigation Committee*. 2012, *The Official Report of the Fukushima Nuclear Accident Independent Investigation Committee*, https://www.nirs.org/wp-content/uploads/fukushima/naiic_report.pdf.

**Key Terms:**

Evacuation zone: The area in which residents are forced to leave due to safety and health concerns.

National state of emergency: A situation in which a government is empowered to perform actions or impose policies that it would normally not be permitted to undertake. A government can declare such a state during a disaster, civil unrest, or armed conflict. The prime minister is given the authority to declare a state of emergency.

Kantei: The prime minister's official residence.

Diet: The national bicameral legislature of Japan. The National Diet Building is located in Tokyo.

Tokyo Electric Power Company (TEPCO): A utility holding company servicing Japan's Kantō region, Yamanashi Prefecture, and the eastern portion of Shizuoka Prefecture. This area includes Tokyo.

## Summary:

Due to the human risk involved, it is of utmost importance that this committee create solutions to prevent more chemicals from entering the atmosphere, as radiation exposure can cause myriad health issues. Additionally, policy updates are necessary to limit the environmental consequences for crops and fauna. To avoid future catastrophes akin to the one at the Fukushima Daiichi plant, it is also imperative that legislation is created to tackle infrastructural requirements for all nuclear plants, including, but not limited to, safeguards for natural disasters. This legislation should especially tackle the events in Japan, but should have an international scope that is applicable to other countries with nuclear programs. The health and safety of hundreds of thousands of civilians is in jeopardy, thus creative thinking and immediate action is necessary.

## Questions to Consider:

1. Are you in favor of nuclear energy? Why or why not?
2. What experience do you have working with nuclear energy? How involved are you with the industry?

3. What past legislation has the country of which you're citizen employed regarding safe use of nuclear energy?
4. How was the Fukushima Daiichi power plant vulnerable to natural disasters? How could the accident have been prevented?
5. How should the Diet and government of Japan best focus their efforts on Fukushima cleanup amongst the cleanup from the earthquake and tsunami?
6. How should legislation be crafted to protect civilians who are in danger of radiation exposure?
    a. How much money/resources should be set aside to stabilize the region affected by the nuclear accident?
7. In your view, should Japan continue its nuclear program?

## Position List:

1. **Shinzō Abe:** Current prime minister of Japan
2. **Naoto Kan:** Japan's Prime Minister during the Fukushima disaster
3. **Agneta Rising:** Current Director-General of World Nuclear Association
4. **Shinjiro Koizumi:** Japan's new environment minister
5. **Kiyoshi Kurokawa (chairman of the NAIIC):** Medical Doctor; Academic Fellow, National Graduate Institute for Policy Studies; Former President of the Science Council of Japan
6. **Sakon Uda**: Managing Director of Investigation
7. **Katsuhiko Ishibashi:** Seismologist; Professor Emeritus of Kobe University
8. **Kenzo Oshima**: Advisor to the President of Japan International Cooperation Agency; Former Ambassador of Japan to the United Nations
9. **Hisako Sakiyama**: Medical Doctor; Former Chief of the National Institute of Radiological Sciences
10. **Masafumi Sakurai:** Lawyer; Former Chief Prosecutor of the Nagoya High Public Prosecutors Office; Former Inspector General for Legal Compliance, Inspector General's Office, Defense Ministry

11. **Koichi Tanaka**: Chemist; Fellow, Shimadzu Corporation
12. **Mitsuhiko Tanaka:** Science journalist
13. **Shuya Nomura:** Professor at Chuo Law School, Chuo University; lawyer
14. **Reiko Hachisuka:** Chair of the Society of Commerce and Industry, Okuma Town, Fukushima Prefecture
15. **Yoshinori Yokoyama**: Social System Designer; Director at the University of Tokyo Executive Management Program (Todai EMP)
16. **Andrew R. Wheeler:** Current Administrator of the United States Environmental Protection Agency
17. **Dmitry Kobylkin:** Ministry of Natural Resources and the Environment of the Russian Federation
18. **Theresa Villiers:** Secretary of State for Environment, Food and Rural Affairs of the United Kingdom
19. **Greta Thunberg:** Environmental Activist from Sweden

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