



# Southern China International MUN

*Official Background Guide*

*World Health Committee: On measures to remedy health risks following the Fukushima waste release.*

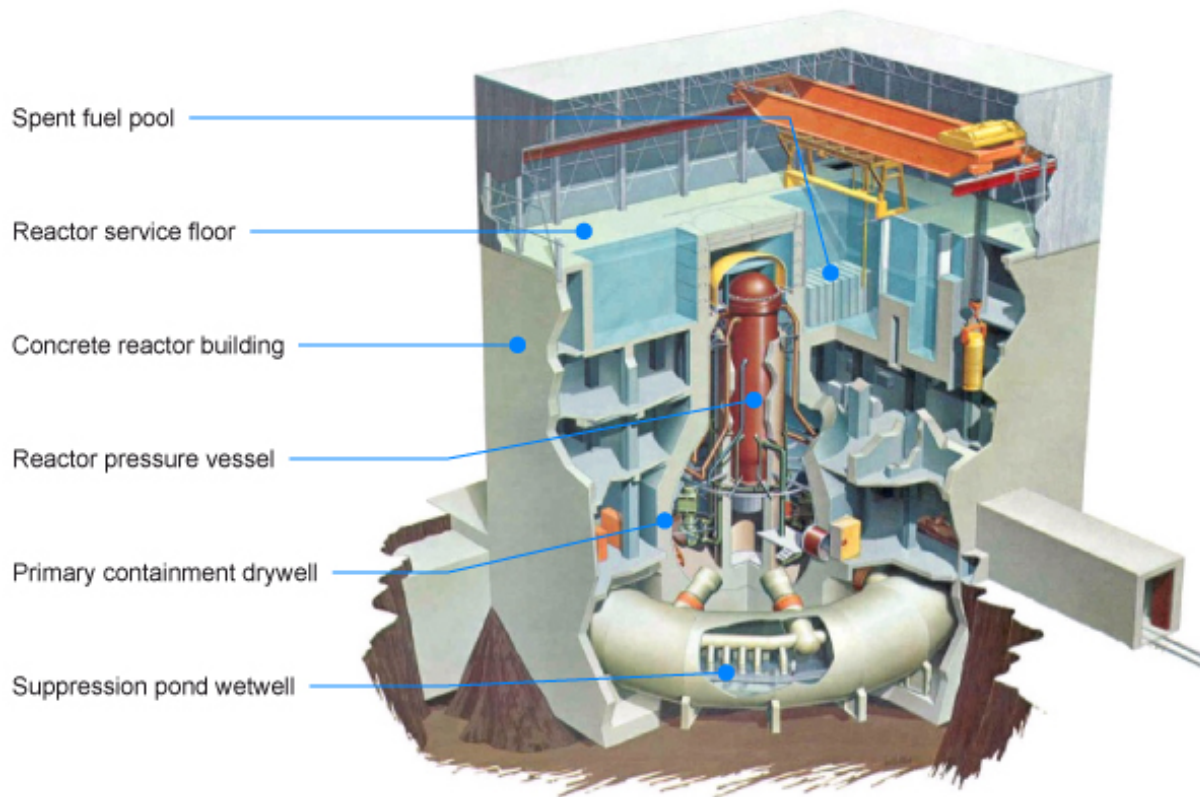
*Agenda overseen by: Bryan Hew*

## 1. Description of the Issue

### 1.1 History of the Issue:

Nuclear energy has known to be useful and has been utilized by human society ever since its discovery as they emit near zero carbon to the atmosphere compared to burning fossil fuels<sup>1</sup>. However, nuclear energy creates radioactive waste, hazardous waste that includes radioactive particles that is harmful to human health and the environment. Exposure to these radioactive particles may cause disruption in human DNA that may further cause **Acute Radiation Syndrome (ARS)** or **Cutaneous Radiation Injuries (CRI)**<sup>2</sup>, different type of disease and illness that can be caused by radiation. Despite the danger, powerplants were built throughout the world, and one of the most known nuclear powerplant is located in Japan.

Fukushima Daiichi Nuclear Power Station (FDNPS), located in Fukushima, Japan, has been abandoned since the Tohoku earthquake and tsunami in 2011. Disasters caused several reactors to meltdown and explode. **Meltdown** and **explosion** of these reactors lead to breaching of **radioactive substances which lead to radioactive contamination throughout the society**<sup>3</sup>. The World Health Organization (WHO) responded by “supporting Member States in building national capacities for preparedness and response to radiation emergencies and implementing the International Health Regulations (IHR)<sup>4</sup>,” alongside helping with research on radiation management, implementing framework for disaster risk reduction<sup>4</sup>.

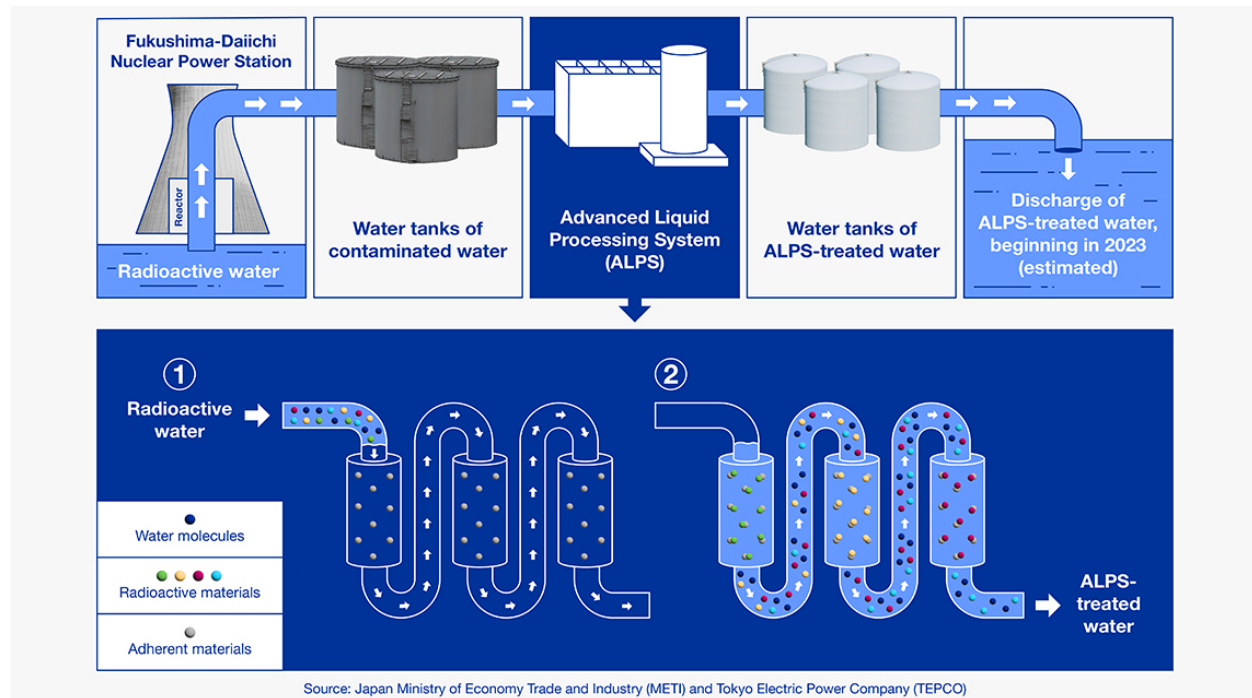


The figure above shows the reactors used in FDNPS. The power station contains six major General Electric (GE) light water boiling water reactors. After the disaster, researchers found that this whole incident was caused by human error. The reactors weren't built to sustain high pressure which was ultimately the cause of explosion and meltdown. During the tsunami, three of the water-cooling towers malfunctioned and stopped working. Without heat removal by circulation to an outside heat exchanger, this produced a lot of steam in the reactor pressure vessels (RPVs) housing the cores, and this was released into the dry primary containment (PCV) through safety valves. Some sort of cooling was needed to stop the pressure from building inside which was injection of seawater. Workers tried to vent the containment, but the vented steam, noble gases and aerosols were accompanied by hydrogen, which then later cause the explosion of unit 1, emitting radioactive particles all over Fukushima. Even with the explosion, something needed to be done to cool down the 2500C water so constant emission of seawater into the generators were done to cool down the reactors. This eventually led to over 1.3 million tons of nuclear wastewater collected and stored inside the powerplant<sup>5</sup>.

Japanese originally planned to discharge the radioactive waste back in 2021 and was assessed by International Atomic Energy Agency (IAEA)—the UN's nuclear watchdog. Despite many countries not supporting the idea, Japan still released wastewaters into the Pacific on August 24, 2023. On the one hand, this action caused closure of sea imports into China as the Chinese government were not convinced by the scientific claims.<sup>20</sup> On the other hand, United States government claimed that "the United States is satisfied with Japan's safe, transparent, and science-based process<sup>25</sup>." IAEA claims that they will be monitoring flow rates and radiation of the radioactive waste.

## 1.2 Recent Developments:

Ever since the proposal of releasing contained wastewater from FDNPS, the IAEA has been reviewing the water and checking safety levels in radiation. To safely discharge the water and lowering the chances of disease carrying water, “The water stored at the FDNPS has been treated through an Advanced Liquid Processing System (ALPS) to remove almost all radioactivity, aside from tritium. Before discharging, Japan will dilute the water to bring the tritium to below regulatory standards<sup>6</sup>.”



The picture shows the full process of ALPS and how it works. Even though ALPS is not directly linked with health issues, it does help with controlling what gets released into the ocean. ALPS allows Japan to release radioactive water with a much lower concentration in radioactive materials compared to if it was released without any management. However, ALPS cannot remove a radioactive material called tritium<sup>7</sup>.

Additionally, Fukushima waste release is set to be a 30-year process making it unpredictable as of what might happen during the release<sup>26</sup>. Countries that are close to Japan will face health issues regarding Fukushima radioactive waste earlier than countries that are further away from Japan. Whereas landlocked countries will potentially be facing the problems through consuming aquatic food that was from contaminated waters, which leads into the explanation on why many fishing industries to even maritime nations are skeptical on the occasion. Pollution of waters also means possible contamination of seafood/sea-products. The fishing industries are scared that consumers will avoid purchasing sea-products to not risk any chances of purchasing nuclear-contaminated item<sup>26</sup>, which will cause major declines in the marine economy.

### **Key Terms:**

**Contaminated Water** – Water that contains impurities, pollutants, or substances that deviate from the expected or desired quality standards, posing potential risks to human health, ecosystems, or the environment.

**Radiation** – the emission or transmission of energy in the form of particles or electromagnetic waves. This energy can take various forms, and the term is commonly associated with ionizing radiation, which has sufficient energy to ionize atoms or molecules by removing electrons from them.

**Cancer** - diseases characterized by the uncontrolled growth and spread of abnormal cells.

**Tritium** - or hydrogen<sup>-3</sup> is a rare and radioactive isotope of hydrogen with a half-life of ~12.3 years.

**Acute Radiation Syndrome** – “an acute illness caused by irradiation of the entire body (or most of the body) by a high dose of penetrating radiation in a very short period of time (usually a matter of minutes)” (*CDC Radiation Emergencies*).

**Cutaneous Radiation Injuries** – “happens when exposure to a large dose of radiation causes injury to the skin” (*Cutaneous Radiation Injury (CRI)*).

## **2. Emphasis of the Discourse**

### **2.1 Right Wing Approach**

Despite having a separation of right-wing and left-wing approach, it is important to keep in mind that most countries take in account of both liberal and conservative opinions and both opinions are used to make decisions. There is no right or wrong but just beliefs of the two different parties.

Many Conservatives believes that releasing wastewater into the Pacific is a correct option. They believe that despite having to release mass amount of tritium, it will be fine since the ocean is already filled with natural tritium, and it poses little risk as tritium has a short radioactive life<sup>10</sup>. On top of that, a politician claims that “The minuscule amount of extra radiation won’t make the tiniest jot of difference. A lifetime’s worth of seafood caught a few kilometers from the ocean outlet has the tritium radiation equivalent of one bite of a banana<sup>10</sup>.”

Conservative approaches the problem from Japan’s and IAEA’s point of view where if they are able to control the radioactive waste, then there will not be any health issues. With a traditional insight, Conservatives tends to lean towards scientific reasoning, and using scientific values to solve a problem. In this case, ALPS.

Conservative approaches are beneficial in that people that are directly apart of the waste release gets to make decisions within safety measures. Rather than directly preparing citizens for health issues that may be caused from contaminated water, they more or less believe that scientific research will automatically decrease health risk regardless of more and more bodies of water

being contaminated. However, because there is no direct control on what is happening, contamination of water may be deadlier than what scientists predicted; consequently, allowing cancerous chemicals to be transferred into the society.

## 2.2 Left Wing Approach

Liberal politicians do not believe that releasing wastewater is a solution. South Korean liberalists believes that since Japanese claim that these contaminated waters are unharful, he “suggest the Japanese government use that water for drinking or for industrial and agricultural purposes.” They believe citizens of countries should not be in threat of radioactive waste even though they did not create it. These progressive policymakers believes that locals should have constant surveillance over what is happening in FNDPS along with mitigating environmental restoration plans that will be useful when the contaminated water eventually reach inland. Scientific research on health risk should be publicized and public awareness on potential health risks should be increased.

Liberalist approach is beneficial in that it promotes sustainability throughout the **biosphere**. Increase in public awareness allow individuals to understand the circumstances of radioactive waste and allows each of them to be ready to approach any possible health diseases. However, mitigating plans that is countrywide is difficult and there are people with different ideologies. People might still think that health risks from Fukushima waste is near zero because ALPS can remove almost all radioactive particles<sup>7</sup>.

In defiance of having contradicting approaches, these are just what each individual parties thinks. There is not a 100% correct approach to **remedying health risk**, but there are many ways that people can think on reducing health risk.

## 2.3 Stance of intergovernmental Organizations

Intergovernmental organizations (IGOs) believe that actions should be taken in reducing health risks, but not to a large extent. The organizations that are not limited to: IAEA, World Health Organizations (WHO), and United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) are directly related to Fukushima waste release. Where IAEA is the lead IGO that is in charge of radioactive waste discharge and believes that it is **safe** when discharging this waste<sup>6</sup>. UNSCEAR created many reports ever since the tragedy in 2011 has found that radioactive molecules are decreasing, and radiation risk is decreasing too. Even so, WHO still insists in informing citizens in guidance on health risk assessments, public health measures, and communication strategies<sup>15</sup>.

Japan, alongside pacific countries like South and North Korea and China will be interested by these organizations. Even though it is said that the release of radioactive waste will not cause increase in cancer rates<sup>15</sup>, seawater is still being contaminated and can bring other diseases. These countries will be faced with contaminated waters fastest compared to other countries that are further away and has lower relation to Fukushima waste. Countries neighboring Japan will potentially have to face health relating issues before any other countries; therefore, these countries are on the seek out to find plans to help with health risks.

## 2.4 Stance of Developed Countries

Since Fukushima waste will mostly affect pacific countries with sea borders, it will mostly be countries that are in possible threat of the contaminated waters who are mitigating plans. This does not mean that countries further away but irrelevant to the topic as **United States, Canada, Britain, France**, and many more MEDCs has strong voices in IGOs.

Many Pacific developed countries including **Japan, Russia, South Korea, Singapore**, all believe that even though ALPS is capable of removing almost all radioactive waste<sup>7</sup>, measures on reducing health risk still needs to be mitigated. (Note: This does not only mean diseases, but also mental illness<sup>16</sup>.) Developed countries tend to approach this situation through communications with IAEAs and internal radioactive-safety organizations to see if there are any possible risks that can be caused by the **contaminated waters**<sup>17</sup>. Most of the developed countries in Pacific regions all have the same motives and are taking similar plans on reducing health risk, but they are more inclined to providing protection to their own population first, then moving onto mitigating plans that can be used worldwide.

## 2.5 Stance of Developing Countries

(CHINA IS A DEVELOPING COUNTRY) detailed explanation on China's stance of Japanese waste release and its potential to be caused by their political agenda.

Developing countries usually have similar approaches when trying to mitigate protocols. However, due to lack of infrastructure along with a lower economic developments, it is hard for developing countries to fully initiate a protocol. In this case, developing countries tend to rely on collaboration and aids from IGOs. It is important to keep in mind that it is not that developing countries are incapable of mitigating plans, but it is hard for them to because of other internal issues that governments are more focused on. "In most developing countries, manpower is abundant but capital and skilled labor are scarce. Modernized technology adapted to the needs of developing countries in reality does not exist<sup>19</sup>."

## 3. Possible Solutions

### 3.1 In Favor of Developed Countries

Developed countries will have a more diverse sets of procedures that they can easily change when reducing health risk. Decision makings and plan proceeding are easily possible due to the strong foundation of infrastructures. Not only should these solutions be pragmatic to the country themselves, but also implementable in a global scale.

A solution that developed countries would support would be on measures to provide information on **contamination, radioactive, radiation** more publicized<sup>21</sup>. Having citizens informative about the situation allows them to deal with possible threats easier and possible allow them to **independently avoid potential harms** that may be brought by the contaminated waters. While

this may seem like a difficult plan, since most developed countries are in support of **Sustainable Development Growth (SDGs)**, 17 goals set by the United Nation for peace and prosperity of the human society<sup>22</sup>, educating the publics about radioactive materials will allow them to not only deal with current situation on Fukushima waste, but possible similar disasters.

### **3.2 In Favor of Developing Countries**

There has been little to no information on how developing countries will deal with the spread of Fukushima waste. However, looking at past incidents when dealing with radioactive health risk, **Nuclear Medicines** were invented to help with the health of people. They use radioactive materials inside the body to evaluate on the health of it<sup>23</sup>, which allows doctors to look into the cells of patients and see if there are any abnormalities within. This solution should be prioritized because according to the IAEA, “the priority attached to radioactive waste management during the early years of nuclear development was not as high as it should have been<sup>24</sup>.” Many of the developing countries **do not have correct safety precocious** when it comes to radioactive powerplants. However, this will lead to major difficulties as IGOs will need to help along with many developed countries to provide the developing countries with possible infrastructure to mitigate this plan.

On the other hand, if this protocol is too complicated to initiate, procedures on spreading **information on radioactive topics** will be indefinitely helpful<sup>21</sup>. Like the procedure for developed countries, teaching the population in developing countries will allow preparations to be made in regard to the spread of Fukushima waste. Governments will be informed and possibly able to create a set of guidelines for if there is a sudden outbreak of cancer or abnormal illness that people are getting from the contaminated waters. This solution is more ideal when it comes to being mitigated widely as developed countries will be able to assist in doing it.

### **4. Keep in Mind the Following**

When investigating countries' stance, make sure to remember that countries will always have multiple stances on the topic. Start with a broad and general idea of the stance of the slowly. Then slowly dive into different parts and relate why the countries are mitigating a plan in a way. Some questions to keep in mind that can help you research are:

- 1. Does the relationship of your country with Japan and their allies change the way you look at Fukushima waste release differently?*
- 2. Are the solutions' benefits limited to your country or is it a solution that is easily applicable in many countries?*
- 3. Do your countries have strong stance and rights in the IGOs that have control over FNDPS?*
- 4. What types of solutions that can be immediately mitigated if there was a sudden outbreak of cancer due to seafood in contaminated waters?*
- 5. Does your country economically rely on aquatic sales where the items are obtained from contaminated waters?*

6. *What are some long-term adequate plans that will guarantee human safety from if a similar incident does happen and also allow environmental sustainability?*

## **5. Evaluation**

Fukushima waste has been around for a decade, yet there still is no direct plan to combat the possible threats that radioactive substances pose. There are not only rise in human health risks, but also environmental/aquatic sustainability as contaminated waters will destroy ecosystems<sup>10</sup>. While many countries barely have anything to do with Fukushima wastewater because they are far away, it is still important for them to know ways to fight back possible diseases like cancer. There are ways to reduce health risk but one plan for a country may cause problems for another country. Therefore, it is important to always keep in mind that countries are interdependent and solutions for one country may not be the exact best for the others, making it important to find a correct balance between MEDCs and LEDCs. As the Fukushima waste release is considered a recent event, it may be difficult to search for related information, good luck delegates!

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