

Discharge into the ocean of ALPS treated water from the Fukushima Daiichi nuclear power Station (FDNPS)

1 The discharge of ALPS treated water is supported by experts and the International Atomic Energy Agency (IAEA)

To steadily reduce the risk associated with radioactive materials, there is a need to remove nuclear fuel materials, such as spent fuel and fuel debris, to a safer place. To secure a place for necessary facilities and reduce higher risk, the government has set the basic policy to conduct controlled discharge of ALPS treated water into the sea.

After more than six years of comprehensive study by experts, reviews by the IAEA, and engagement with parties concerned, the Government of Japan announced the Basic Policy on handling of the ALPS (Advanced Liquid Processing System) treated water at FDNPS on 13 April 2021. Japan continues to provide information to the international community in a highly transparent manner.

IAEA: The operation is “technically feasible and in line with international practice.”

The Director General of IAEA has welcomed the Japanese government’s announcement: “The IAEA stands ready to provide technical support in monitoring and reviewing the plan’s safe and transparent implementation. Japan’s chosen water disposal method is both technically feasible and in line with international practice.

Also, the IAEA’s review report published in August 2021 positively evaluated the Basic Policy, concluding that “it will facilitate the implementation of the whole decommissioning plan”.

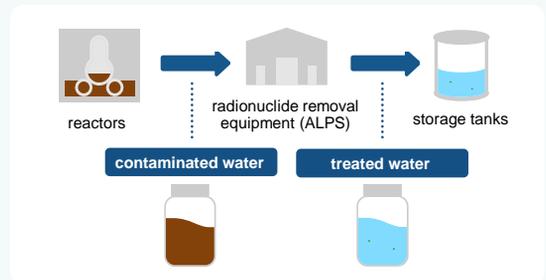


IAEA Director General
Rafael Mariano Grossi

2 Radioactive materials other than tritium are removed beyond safety standards

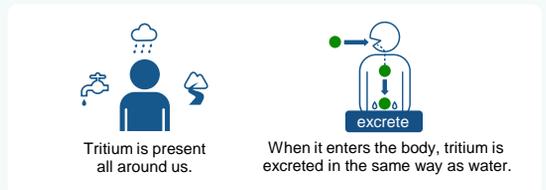
“Treated” and “contaminated” water are completely different in terms of safety

“ALPS treated water” is the water which has been purified from “Contaminated water” (=water generated by cooling fuel debris) and in which the most of the radioactive materials are removed by ALPS to meet the regulatory standards with an exception of tritium.



Tritium is present in the natural environment

Tritium cannot be removed through water purification, but tritium is an isotope of hydrogen, which is naturally present in tap water, food and the human body. Even if it enters the body, tritium is not accumulated and is excreted together with water. Current research has not established that the liquid form of tritium causes bioaccumulation.



3 Tritium is discharged from nuclear facilities operating countries and regions over the world

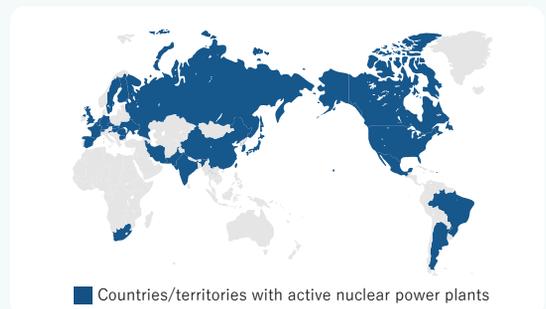
No adverse effects detected

Tritium is released into the ocean, rivers, and atmosphere at nuclear power plants and reprocessing facilities around the world. No adverse effects attributed to tritium have been detected around those facilities.

An issue is total radiation impact, not a radionuclide itself

The existence of tritium or other radionuclides is not an issue. What matter is the total radiation impact from all kinds of radioactive materials in the water.

Regardless of the type of the facility (accident plants or operational reactors), the regulatory standards are set to control the type of the total radiological impact of all the nuclides. (It is not a matter of nuclides or number of nuclides, but the total radiological impact to human should be considered).



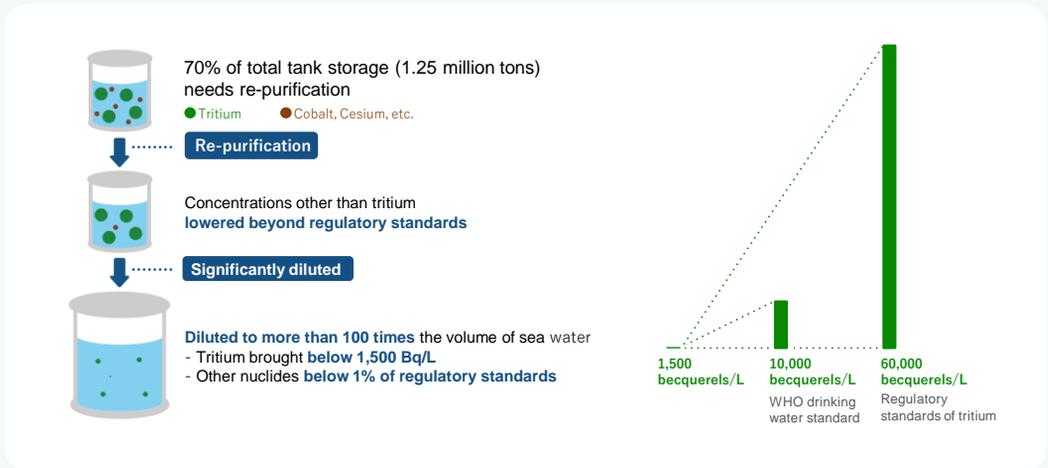
Japan working to ensure food safety

4 Radiation from treated water is 100,000 times lower than the annual dose of natural radiation

Treated water to be diluted in seawater more than 100 times

Before it is discharged into the sea, treated water is to be diluted in seawater more than 100 times, and tritium concentration lowered to about 1/7th of the drinking water standard set by the World Health Organization.

Experts have used a comparative model established by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) to confirm the safety of the effects of ALPS treated water on humans. Based on this method, they estimated the additional exposure to radiation that would result from the discharge into the sea of approx. 22 trillion becquerels of tritium per year, and concluded it would represent less than 1/100,000th of a person's average annual exposure to radiation from the natural world (including nuclides other than tritium).



Japan will conduct monitoring and assessment to ensure safety

The Government of Japan will strengthen and expand monitoring programs at sea area, beaches and other locations both before and after the discharge of treated water. Japan also plans to implement a highly transparent monitoring system in cooperation with representatives from the local agriculture, forestry and fishery industries, as well as local authorities and IAEA. Measures will be taken, prior to the discharge, to assess the potential impact on the marine environment, and to ascertain the environmental situation through continuous monitoring after the discharge, in close cooperation with international organizations.

5 Effective control system guarantees the safety of Japanese food

Internationally recognized monitoring and testing

Safety of Japanese food has been demonstrated through monitoring of radionuclides in food conducted since soon after the March 2011 accident at FDNPS. Japan has robust control system which prevents distribution of food exceeding regulatory standards. Over 8 years, border inspections carried out by countries importing Japanese food have not detected a single case of a product exceeding the Japan's strict standards. The Joint FAO /IAEA Centre of Nuclear Techniques in Food and Agriculture stated, "measures to monitor and respond to issues regarding radionuclide contamination of food are appropriate".

Japan striving to lift import measures

In the wake of the nuclear accident, 54 countries and regions introduced import restrictions and/or control measures on Japanese food. As a result of the Japanese government's continued efforts, 40 countries and regions have lifted them as of June 1, 2021. The remaining import measures have no scientific basis, which is why the Japanese government continues to request that such measures be lifted at once.

Status of import measures on Japanese food (as of May 28, 2021)

After the nuclear accident: 54 countries & regions

Since then: 40 have lifted the measures

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- Request test or origin certificates for products from certain or all prefectures
- Impose import restrictions on products from certain prefectures

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