

What is ALPS treated water?

- In the "Basic Policy" of April 2021, it was decided to start the discharge into the sea in about two years after purifying radioactive materials other than tritium to below the regulatory standards through ALPS treatment (subject to necessary approval of the NRA).
- Before the discharge, (1) purify nuclides other than tritium by ALPS treatment, and (2) reduce the concentration of tritium to 1,500 Bq/L, which is far below the regulatory standards (60,000 Bq/L), through dilution (more than 100 times) with seawater (less than 1/100 of the regulatory standard for materials other than tritium).
- Monitoring of the status before and after discharge (assessment and review by the IAEA and third-country laboratories in addition to TEPCO).



Impacts of ALPS treated water on the human body, etc.



The results of the assessment of the impact of ALPS treated water on humans are approx. 1/1,000,000 to 1/70,000 of the impact from natural radiation (Japanese average: 2.1 mSv per year).

The results of the impact on plants and animals (flatfish and brown seaweed) are approx. 1/3,000,000 to 1/1,000,000 of the reference value (1~10mGy/day) proposed by the International Commission on Radiological Protection (ICRP), and on crabs are approx. 1/30,000,000 to 1/10,000,000 of the reference value.



- Relatives to Hydrogen. Widely present in rainwater, seawater, tap water, human body and nature.
- Tritium is similar in nature to hydrogen, making it very difficult to remove tritium alone.
- It emits very weak radiation, but only to the extent that a sheet of paper can prevent it. Even if it enters the body, it is not accumulated and is excreted with water.
- The level of the total amount of tritium at the time of discharge is below 22 trillion Bq per year (the pre-accident control target), which is lower than the amount discharged from many nuclear power plants and other facilities in Japan and abroad.

Annual Tritium Discharged from Nuclear Power Plants in Neighboring Countries and Regions

Tritium is discharged into the sea and rivers as liquid effluents and into the atmosphere through ventilation, etc., at nuclear power plants and other facilities in Japan and abroad, in compliance with the laws and regulations of each country and region.



(Source) Japan : JNES, NRA Japan, ROK : KHNP website, China : China Nuclear Energy Association, Taiwan : Taiwan Power Company website

*BWR: Boiling Water Reactor PWR: Pressurized Water Reactor

Regulatory Standards for Radioactive Materials and ALPS Treatment Process

- The presence of radioactive materials is not a problem in itself, but rather the level at which they do not impact the human body or the environment (i.e., below regulatory standards).
- Regulatory standards are determined by the sum of the radiation impacts of nuclides contained in a reactor, regardless of whether it is an accidental reactor or a normal reactor. (Judged by the total value converted to the impact on humans, not by the type or number of nuclides.)

Purify nuclides including those specific to the accident reactor.

Confirm that the total radiation impact of nuclides other than tritium is purified below the regulatory standard.

Further diluted more than 100 times and discharged.

Developing an Understanding of the International Community

Political Dialogue



July 18,2024, the Tenth Pacific Islands Leaders Meeting (PALM10) was held with the participation of leaders and representatives from 19 countries and regions and PIF Secretary-General. Diplomatic Mission and Bilateral Briefings



May 12, 2023, a briefing session to the Government of ROK was held in a hybrid format (in Seoul and online).

Domestic and Foreign Press Briefings

- Briefings to press in Tokyo
- Briefings to press in the following regions; Southeast Asia, Oceania, Central and South America, etc.
- Individual explanations and answers to written questions
- Conducting press tours to Fukushima

Reviews by the IAEA



December 11, 2024, the IAEA Task Force consisting of the IAEA officers and international experts visited TEPCO's Fukushima Daiichi Nuclear Power Station to review the facilities for the discharge of ALPS treated water into the sea.

IAEA Comprehensive Report

Apr. 2021 TOR **Basic Policy**

The Japanese government announces a basic policy on handling of ALPS treated water. TOR on the Safety Review of ALPS treated water between Japan and the IAEA was signed

IAEA Mission to

Japan (Review)



Jul. 4 2023 **Comprehensive Report**

The IAEA Comprehensive Report, which summarizes a series of activities conducted by the IAEA and presents its conclusions, was presented to Prime Minister Kishida by IAEA Director General Grossi.



The IAEA conducted a total of five missions (review) to Japan over a two-year period and published a total of six reports.

Aug. 24 2023 The start of the discharge

IAEA Mission to Japan After the start of the discharge, three IAEA missions to

Japan (reviews) have been conducted in October 2023, April 2024, and December 2024, and three reports have been published.

Points in the Comprehensive Report

The IAEA has concluded that the approach to the discharge of ALPS treated water into the sea, and the associated activities by TEPCO, NRA, and the Government of Japan, are consistent with relevant international safety standards.

- The IAEA has concluded that the discharge of ALPS treated water will have a negligible radiological $\mathbf{\nabla}$ impact on people and the environment. The IAEA is committed to engaging with Japan before, during, and after the treated water discharge.
- Additional reviews and monitoring activities are envisaged that will continue and which will provide additional transparency and reassurance to the international community.

Discharge of ALPS treated water into the Sea

- The first discharge into the sea started on August 24, 2023. To date, 12 discharges have been completed. The cumulative amount of treated water discharged is 93,997 m³ (as of May 2025).
- Multi-layered monitoring has been conducted with the involvement of the IAEA. Through the necessary processes (ALPS treatment and seawater dilution), the concentrations of all radionuclides including tritium have been below the regulatory standard values, and the discharges have been safely carried out. Based on the IAEA review missions after the start of the discharge in October 2023, April 2024 and December 2024, the IAEA reaffirmed the fundamental conclusions of its safety review as outlined in the Comprehensive Report.
 - In FY2025, approximately 54,600 m³ of ALPS treated water (with a total tritium amount of about 15 trillion Bq), the same amount as in FY2024, is scheduled to be discharged in Seven batches.



Multi-layered Monitoring

Additional Measures

- At the telephone meeting between then PM Kishida and DG Grossi on September 20, 2024, Japan and the IAEA concurred in conducting the additional measures on the existing monitoring under the IAEA framework in order to provide the international community with even more transparent information in the light of the interests of the concerned countries.
- Sample collection is conducted by the experts from third-party laboratories, as well as the IAEA officials.
- On October 15, 2024, seawater sampling in the vicinity of TEPCO's Fukushima Daiichi Nuclear Power Station was conducted by the experts from China, Republic of Korea, and Switzerland.
- From February 19 to 21, 2025, (1) seawater sampling in the vicinity of TEPCO's Fukushima Daiichi Nuclear Power Station (IAEA Director General Grossi presided over the sampling.), (2) selection of the landed fishery products at a fishing port in Fukushima Prefecture, and (3) sampling of ALPS treated water prior to dilution on the premises of TEPCO's Fukushima Daiichi Nuclear Power Station were conducted by the experts from China, Republic of Korea, Switzerland and France (French expert participated in only (3)).
- On April 15, 2025, sampling of ALPS treated water diluted with seawater prior to the discharge into the sea on the premises of TEPCO's Fukushima Daiichi Nuclear Power Station was conducted by the experts from China, Republic of Korea, Russia and Switzerland.



Actual Measured Value after Discharge started - Tritium value comparison -

☑ The tritium concentration in seawater after discharge started is far below the operational limit, which is set far below the regulatory standards.

