

Overview of IAEA Review of Safety Related Aspects of Handling ALPS Treated Water at Fukushima Daiichi Nuclear Power Station

Tokyo Electric Power Company Holdings, Inc.
Fukushima Daiichi Decontamination and
Decommissioning Engineering Company

The 1st edition Sep. 2022

- ✓ TEPCO was **reviewed by the International Atomic Energy Agency (IAEA) on the safety aspects of handling of ALPS treated water at the Fukushima Daiichi Nuclear Power Station** in February 2022. In April of the same year, the IAEA published a report on its review. This leaflet provides an overview of the review and the report.
- ✓ In the review, **the technical items were assessed regarding the characteristics of ALPS treated water and water to be discharged, the safety of the discharge process, and the radiological impact on the public and the environment, in light of IAEA safety standards.**
- ✓ **TEPCO will be reviewed by the IAEA for a long time period, before, during and after the discharges.**
- ✓ TEPCO will continue to **receive reviews by the IAEA in light of IAEA safety standards as our efforts progress and make absolutely sure that safety is confirmed** while **disseminating information** of the results of these reviews based on scientific evidence **to parties both in Japan and overseas in a highly transparent manner.**

Overview of the IAEA Review (February, 2022)

【Schedule】

Feb. 14,17, and 18, 2022 (Meeting at Tokyo)
Feb. 15 and 16, 2022 (Inspection at Fukushima Daiichi Nuclear Power Station)

【Members】

IAEA Task Force consisting of 15 members, including Gustavo CARUSO Director and Coordinator, the IAEA secretariat, and international experts*
* Nationality : United States, United Kingdom, Republic of Korea, France, Russia, China, Viet Nam, and Argentina



The IAEA task force

【Topics】

1. Crosscutting requirements and recommendations
2. Characterization of discharge/source term
3. Safety related aspects of systems and processes for controlling discharges
4. Radiological environmental impact assessment (REIA)
5. Regulatory control and authorization of discharges
6. Source and environmental monitoring programs
7. Involvement of interested parties
8. Occupational radiation protection



The review meeting



Observation of the sampling of ALPS treated water



Inspection around the discharge vertical shaft

Observation of the IAEA Review Report (published in April, 2022)

■ The safety of the facilities regarding the discharge of ALPS treated water into the sea

- The IAEA acknowledged that TEPCO performed significant amount of work and analysis and **successfully incorporated prevention measures in the design of the facility as well as in the associated operating procedures.**

■ The radiological environmental impact assessment (REIA)

- The IAEA acknowledged that a comprehensive and detailed analysis was conducted and also noted that **the radiological impact on the public was expected to be very low and significantly below the level set by the Japanese regulatory body.**

※ TEPCO's evaluation value is less than 0.0004 mSv/year, compared to the regulatory standard value set by Japanese government (dose constraint for the discharge of ALPS treated water: 0.05 mSv/year/person).

Main findings in the review and our response

[Ex.1] In response to a finding that **it is important to demonstrate that the effects of organically bound tritium※ (OBT) is considered in the REIA**, TEPCO has assumed that 10% of tritium from ingested seafood is OBT and conducted an evaluation with a greater safety margins.

※ OBT is tritium that is ingested after bonding with organic substances, such as proteins, and is excreted from the body in about 40 days.

[Ex.2] In response to a finding that **it is important to provide more realistic assessments and explanations in order to gain the understanding of parties concerned in Japan and overseas, though the REIA was based a method of estimating risk that is high to avoid underestimation**, TEPCO has agreed to revise the REIA by selecting realistic source term of radionuclides in ALPS treated water.

Technical finding from the IAEA Task Force have been and will be reflected in the revised application for an amendment to the implementation plan regarding the discharge of ALPS treated water into the sea and in the revision of the REIA Report.

TEPCO will continue to receive reviews by the IAEA in light of IAEA safety standards as our efforts progress based on the Japanese government's basic policy and make absolutely sure that safety is confirmed while disseminating information of the results of these reviews based on scientific evidence to parties both in Japan and overseas in a highly transparent manner.

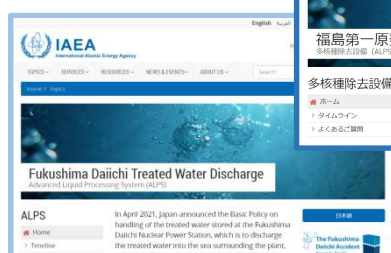
※ The next IAEA review will be held Nov. 14 to 18, 2022.

IAEA (International Atomic Energy Agency)

- **The IAEA is an organization under the United Nations working for the safe and peaceful use of nuclear energy.**
- Since its establishment in 1957, the IAEA has **worked with 17 member states and related organizations** to promote the peaceful use of nuclear energy and to prevent the military use of it.
- **To protect human health and the environment from radiation**, the IAEA has the authority to establish and adopt **"Safety Standards"**.
- The IAEA Environment Laboratories which are staffed by experts in various fields, have been established to **provide comprehensive knowledge on the environmental effects of radioactive materials and their protection**.
- The IAEA also **reviews the entire decommissioning** of the Fukushima Daiichi Nuclear Power Station.

[The IAEA official page related to the ALPS treated water]

Official page ↓



Japanese page ↑

Example of the web topics

- Overview of the review mission
- Publication of the report of the review
- Explanation of construction of the ALPS facility
- Monitoring methods of ALPS treated water by the IAEA etc.



← The IAEA official page

The IAEA official page in Japanese →



IAEA
International Atomic Energy Agency



Observation of the ALPS by the IAEA Director General Rafael Grossi (May 2022)

TEPCO

〈This leaflet is also released in the following page〉



Tokyo Electric Power Company Holdings, Inc.
Fukushima Daiichi Decontamination and Decommissioning Engineering Company
Treated Water Portal Site
<https://www.tepco.co.jp/en/decommission/progress/watertreatment/index-e.html>