Overview of progress on Decommissioning and Fukushima reconstruction

Ministry of Economy, Trade and Industry (METI)

September 2024

Decommissioning and Reconstruction



Agenda

- 1. Progress of the Decommissioning of Fukushima Daiichi NPS
- 2. Reconstruction of Surrounding Area of Fukushima Daiichi NPS
 - 2-1. Current Status of the Surrounding Area
 - 2-2. Progress of Reconstruction

1. Progress of the Decommissioning of Fukushima Daiichi NPS

Mid-and-long-Term Roadmap towards the Decommissioning of Fukushima Daiichi



5th revision published in 2019

History of the decommissioning of the FDNPS



Decommissioning Processes in the current Roadmap and IAEA Peer-Review



Reducing the overall risk

- removing fuel from the SFPs
- discharging of ALPS treated water
- treating of waste
- retrieving fuel debris



Essential for the reconstruction of Fukushima



Immediate approach to the decommissioning of FDNPS

1. Removing fuel from SFP



9

Fuel removal from Spent Fuel Pools



Immediate approach to the decommissioning of FDNPS

2. Fuel debris retrieval

Reducing the overall risk

- removing fuel from the SFPs
- discharging of ALPS treated water
- treating of waste
- retrieving fuel debris

Essential for the reconstruction of Fukushima

11



Fuel debris retrieval at Unit 2



Immediate approach to the decommissioning of FDNPS

3. Water management

Reducing the overall risk

- removing fuel from the SFPs
- discharging of ALPS treated water
- treating of waste
- retrieving fuel debris

Essential for the reconstruction of Fukushima



Water management

 \sim reduce contaminated water generation, discharge ALPS treated water \sim



※Area where common fishery rights are not set

IAEA Reviews on Discharging ALPS Treated Water (1) ~IAEA Comprehensive Report (before discharging)~

IAEA COMPREHENSIVE REPORT ON THE SAFETY REVIEW OF THE ALPS-TREATED WATER AT THE FUKUSHIMA DAIICHI NUCLEAR POWER STATION

IAEA Comprehensive Report on the Safety Review of the ALPS Treated Water at TEPCO's Fukushima Daiichi NPS (published in July 2023)



(Photo: Cabinet Public Affairs Office)

Main conclusions;

The discharge of ALPS treated water into the sea,

- 1) are consistent with relevant international safety standards.
- ② will have a negligible radiological impact to people and the environment.



"IAEA will stay at Fukushima until the last drop is released and continue to inspect and make sure it is safe." IAEA Reviews on ALPS Treated Water Discharge (2) Interlaboratory Comparison (ILC) of ALPS Treated Water (Corroboration of Source, before and after discharging)

ILC: to assess the quality of TEPCO's monitoring/measurement results in comparison with those of other participating laboratories.



Participated Laboratories:

1st ILC: 3 IAEA Labos (Monaco, Seibersdorf, Vienna), Switzerland, France, US, Korea 2nd ILC: 3 IAEA Labos (Monaco, Seibersdorf, Vienna), Korea

Key findings of both ILC:

- The IAEA notes that these findings provide confidence in TEPCO's capability for undertaking accurate and precise measurements related to the discharge of ALPS treated water.
- Furthermore, based on the observations of the IAEA, TEPCO has demonstrated that they have a sustainable and robust analytical system in place to support the ongoing technical needs at FDNPS during the discharge of ALPS treated water.

IAEA Reviews on ALPS Treated Water Discharge (3) Interlaboratory Comparison (ILC) of ALPS Treated Water (Corroboration of Sea area, after discharging)

- Targets of the ILC:
 - collecting seawater and seabed sediments in the vicinity of the Fukushima Daiichi, marine products in Fukushima Prefecture
 - pretreatment of the collected samples.
- 2 sampling rounds (in 2022 and 2023), the first round report published.



IAEA Review of Safety Related Aspects of Handling ALPS-Treated Water at TEPCO's Fukushima Daiichi Nuclear Power Station

First Interlaboratory Comparison on the Determination of Radionuclides in the Marine Environment 1st ILC report on Sea area

<u>Participated Labos</u>: 2 IAEA (Monaco and Vienna), Korea <u>Key finding</u>:

The IAEA notes that these findings provide confidence in Japan's capability for undertaking accurate and precise measurements related to the discharge of ALPS treated water.

- First Review Mission to Japan after the Start of ALPS Treated Water Discharge
- Report on the Mission to Japan conducted in April 2024

IAEA Review of Safety Related Aspects of Handling ALPS-Treated Water at TEPCO's Fukushima Daiichi Nuclear Power Station

Report 1: First Review Mission to Japan after the Start of ALPS Treated Water Discharge (October 2023)

IAEA Review of Safety Related Aspects of Handling ALPS-Treated Water at TEPCO's Fukushima Daiichi Nuclear Power Station

Report on the Mission to Japan conducted in April 2024

▲ First Review Mission to Japan after the Start of ALPS Treated Water Discharge Published: Jan. 2024 Purpose of the Review: to follow up on the findings from the IAEA's Comprehensive Report issued in July 2023. Key finding: The Task Force did not identify anything that is inconsistent with the requirements in the relevant international safety standards.

<u>Purpose of the Review</u>: the main technical topics considered by the IAEA as part of its safety review before the start of discharges.

Key finding:

The Task Force did not identify anything that is inconsistent with the requirements in the relevant international safety standards.



▲Task Force members visited FDNPS on 24 April 2024

• <u>8 batches of discharging have been completed so far.</u>

• Total volume of discharged : 62,631m (tritium: 10.2 trillion Bq, Max. 276 Bq/L)

	1 st Batch	2 nd Batch	3 rd Batch	4 th Batch
Duration (FY2023)	August 24 - September 11	October 5 – 23	November 2 - 20	February 28 – March 17
Amount	7,788 m³ (1.1 TBq of Tritium)	7,810 m³ (1.1 TBq of Tritium)	7,753 ㎡ (1.0 TBq of Tritium)	7,794 m³ (1.3 TBq of Tritium)
	5 th Batch	6 th Batch	7 th Batch	8 th Batch
Duration (FY2024)	5th Batch April 19 – May 7	6th Batch May 17 – June 4	7 th Batch June 28 – Jul 16	8th Batch Aug 7 – Aug 25

Planned discharging by the end of Fy 2024 (end of March 2025)

	9 th Batch	10 th Batch	11 th Batch
Duration (FY2024)	August - September	September-October	March, 2025
Amount	Approx. 7,800 m (2.4 TBq of Tritium)	Approx. 7,800 m³ (2.7 TBq of Tritium)	Approx. 7,800 m³ (3.0 Tbq of Tritium)

2. Reconstruction of Surrounding Area of Fukushima Daiichi NPS 2-1. Current Status of Fukushima Daiichi NPS Surrounding Area

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Changes in Air Dose Rate and Lifting Evacuation Order





	maximum figures	Current status
Areas under evacuation orders	1,150 km² (Aug 2013)	309 km² (July 2024)
The number of evacuees in whole Fukushima Prefecture	164,865 (May 2012)	25,959 (May 2024)

IAEA Review of Off-site Soil Disposal/Recycling plan

IAEA assistance to the Ministry of the Environment, Japan on 'volume reduction and recycling of removed soil arising from decontamination activities after the Accident of the Fukushima Daiichi Nuclear Power Station'

FINAL REPORT ON THE EXPERTS MISSION

Report issued: September 2024

Major conclusion:

- The approach and activities implemented by the MOEJ to date for the managed recycling and the final disposal of removed soil and waste are consistent with the IAEA Safety Standards.
- Through ongoing collaboration, transparency, and adherence to the IAEA Safety Standards, Japan continues to make significant strides towards the long-term management of removed soil and waste.



2. Progress of Reconstruction- In Parallel with Decommissioning -

 \sim Progress of industrial development \sim

 \diamond Progress of industrial development in areas where evacuation orders have been lifted

Asano-Nenshi Co. (Futaba town) April 2023~ O Head quarter: Gifu pref. (West Japan) OBusiness area: a new high-tech twisted yarn factory

Toyotsu-Lithium Co. (Naraha town) October 2022~

OHead quarter : Futaba town OBusiness area : First plant in Japan to manufacture lithium hydroxide used in lithium-ion batteries

Biomass Resin Co. (Namie town) November 2022~ OHead quarter : Namie town OBusiness area : New plant to manufacture biomass plastic

Almedio Co. (Futaba town) February 2023~ OHead quarter : Tokyo OBusiness area : New plant to produce carbon nanofibers

ARCALIS Co. (Minamisouma city) August 2023~
OHead quarter : Minamisouma city
OBusiness area : New plant to manufacture pharmaceutical ingredients for mRNA drugs and vaccines for coronaviruses, influenza, cancer treatments



Reconstruction of Fukushima

\sim Aiming for Creative Reconstruction, Not Simply Restoration \sim

 Under the "Fukushima Innovation Coast Framework", GoJ established 2 key organizations, FIPO in 2017 and F-REI in 2023, to realize "Creative Reconstruction" of Fukushima.



Thank you for your support for Fukushima

More info from here https://www.meti.go.jp/english/earthquake/index.html