TEPCO

2020–2021

Integrated Report

Fukushima Projects

Decommissioning

Number of employees
Approx. 1,450
* As of June 1, 2021

Facilities to be decommissioned
Number of reactors: 6

Treated water storage tanks
Approx. 1.27 million m³
* As of June 1, 2021

Decommissioning expenses*1
¥8 trillion

*1 Estimates put forth in the TEPCO Reform Proposal written by the Committee for Reforming TEPCO and Overcoming 1F Challenges (TEPCO Committee)

We will complete decommissioning in accordance with the Mid/Long-term Decommissioning Action Plan

Recovery in Fukushima is a prerequisite for safely and steadily decommissioning the Fukushima Daiichi Nuclear Power Station. As we aim to complete the long-term decommissioning process, we will strengthen safety/quality management functions in consideration of project management and field conditions/actual conditions of equipment in the field, and move forward safely and steadily with decommissioning work in accordance with the Mid/Long-Term Decommissioning Action Plan 2021.

Regarding the disposal of water treated with multi-nuclide removal equipment, we are prioritizing safety while making preparations for ocean discharge in accordance with the government's basic policy. In conjunction with this, we are developing communication so as to quickly and accurately convey information and also strengthening/expanding ocean monitoring so as to minimize reputational damage. We are also proactively engaged in initiatives that focus on every stage of the life of products from Fukushima, from production and processing, through distribution and consumption, and welcome reviews by external experts, such as the International Atomic Energy Agency.

Thanks to our multi-layered countermeasures, we've been able to reduce the amount of contaminated water being generated daily to approximately 140m³/day, which exceeds our goal for December 2020, and have completed treating the contaminated water that had accumulated inside the turbine buildings of Units 1 through 4. We moved safely forward with removal of spent fuel from the Unit 3 spent fuel pool, and were able to complete the removal of all spent fuel by the end of February 2021, approximately a month ahead of schedule. In preparation for the retrieval of fuel debris we are in the process of developing experimental fuel debris retrieval equipment to be used in Unit 2, and also prioritizing safety while conducting internal investigations of the Unit 1 and Unit 3 primary containment vessels.

Additionally, based on our policy of "balancing recovery with decommissioning," we are leveraging open and transparent processes to contribute to the creation of a strong industrial and economic foundation for the region and the creation of local jobs and human resource training by urging local companies to participate in the decommissioning process and inviting companies from outside the region to come to Hamadori and make it the center of the world for decommissioning technology.

After the earthquake that occurred off the coast of Fukushima Prefecture on February 13, 2021, we continually made announcements about conditions at the power station and various events that occurred. However, I fully regret that we were still not able to convey information that alleviated the worries and concerns of local residents. We need the understanding of people in the region and society as a whole in order to move forward with decommissioning, so we will improve the way that we convey information and explain the status of decommissioning in a careful and easy-to-understand manner.

Chief Decommissioning Officer,
President of Fukushima Daiichi Decontamination & Decommissioning Engineering Company,
Tokyo Electric Power Company Holdings, Inc.

Akira Ono

Worked in primarily the Nuclear Power Division until being appointed Site Superintendent of the Fukushima Daiichi Nuclear Power Station in 2013. Has been in his current position since April 2018.

The Fukushima Daiichi Decontamination & Decommissioning Engineering Company was established within TEPCO HD in April 2014 in order to clarify responsibility and authority in regards to decommissioning and contaminated water countermeasures, and also quicken decision-making.

Time needed for decommissioning
Approximately **30~40** years

Publicly disclosed radiation data
Approximately **219,000** pieces of data/year

Number of visitors
Approximately **4,300** people/year
Of which overseas visitors account for approximately 2.4%

* During FY2020 tours of the power station were suspended during the following time periods due to the Covid-19 pandemic
・February 29-June 30, 2020
・January 8-March 21, 2021

Employees
Approximately **3,400** * As of June 2021
Local employment rate: Approximately 65%

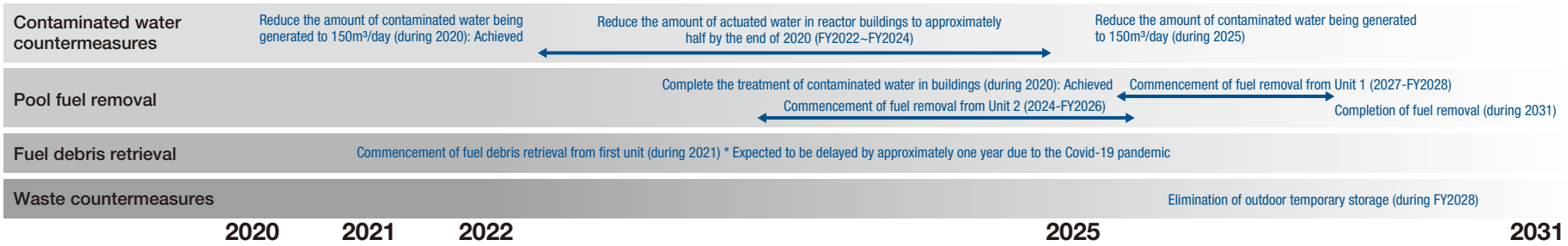
Worker exposure dose (average)
Approximately **0.39** mSv/month
* As of March 2021

Area in which normal work uniforms may be worn
Approximately **96**% of the site area

Mid/Long-Term Decommissioning Action Plan 2021

The Mid/Long-term Decommissioning Action Plan 2020 was created and announced in March 2020 in order to stipulate the major work processes needed to achieve the decommissioning objectives put forth in the Mid/Long-Term Roadmap and the NRA's Risk Map. The action plan was revised in March 2021.

Mid/Long-Term Roadmap milestones that in the Action Plan seeks to reach



Current initiatives and basic approach to accumulating decommissioning technologies in the region (Building a local industry)

To date we have focused on Steps 1 and 2 and seen results. We will continue/strengthen these initiatives as we move on to Step 3 in FY2021.

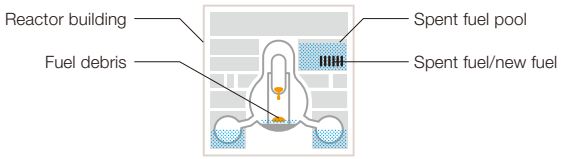
STEP1 Encourage more involvement by local companies
Create an environment that enables more new local companies to get involved and expand outsourcing.

STEP2 Improvement assistance
Help to improve the skill level of local companies that will enable them to participate in the decommissioning process.

STEP3 Create a new industry in the region
Build facilities that will enable products previously purchased outside of the prefecture to be manufactured locally.

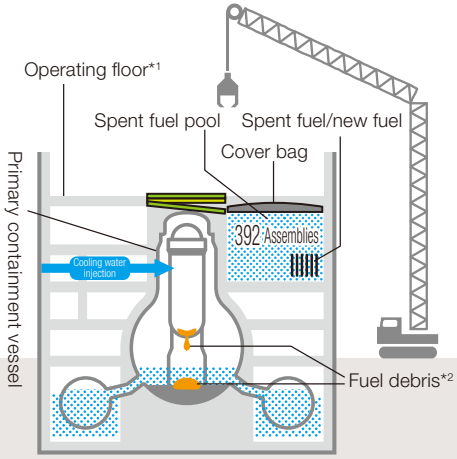
* We expect a good impact on the economy of Hamadori from the construction and operation of facilities mentioned in STEP 3.
(During construction) Total investment: Approximately ¥500 billion
(During operation) Economic impact in Hamadori: Approximately ¥20~¥30 billion/year

Current Conditions at the Fukushima Daiichi Nuclear Power Station



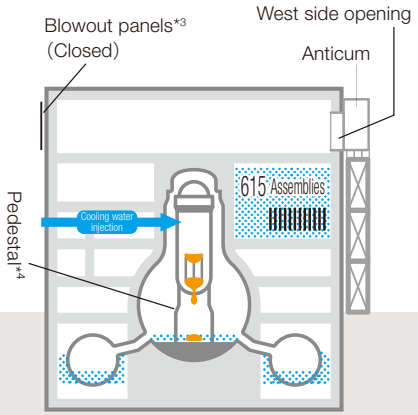
Situation regarding fuel and fuel debris removal

Unit 1



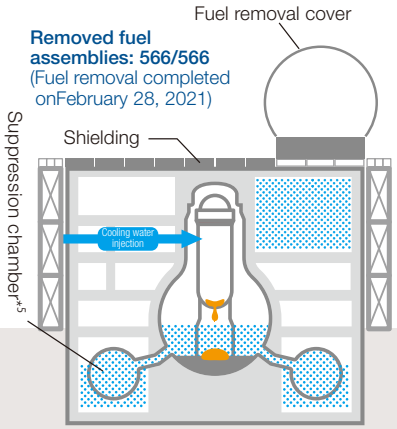
In preparation to remove fuel from the spent fuel pool we have completed dismantling of the building cover (remaining portions) and will begin construction of the large cover in September 2021.
Furthermore, in preparation to retrieve fuel debris*2 we are building an access route in order to conduct an internal investigation of the primary containment vessel.

Unit 2



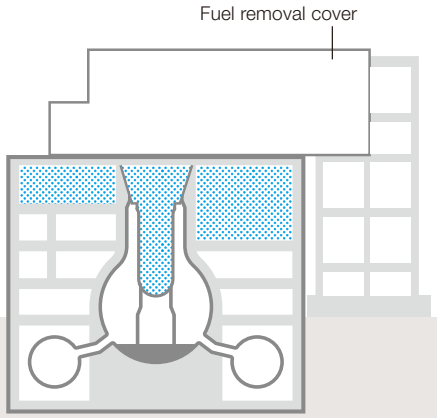
In preparation for spent fuel removal we will construct a fuel removal platform/anticum on the south side of the reactor building. Preparations are also underway as this will be the first unit from which fuel debris*2 will be retrieved.

Unit 3



Fuel (566 assemblies) removal from the spent fuel pool was completed on February 28, 2021.
In preparation for fuel debris*2 removal, we are deliberating the need to conduct additional internal investigations of the primary containment vessel.

Unit 4



Fuel (1535 assemblies) removal from the spent fuel pool was completed on December 22, 2014 thereby eliminating any risks from the fuel.

*1 Operating floor: Upper most floor of the reactor building;
*2 Fuel debris: Fuel inside the core of the reactor pressure vessel that melted, fused with primary containment vessel internals and then solidified during the accident;
*3 Both panel: Prevent the destruction of the building by automatically releasing pressure when pressure increases inside the reactor building;
*4 Pedestal: Foundation that supports the reactor. Constructed by filling a cylindrical steel shell with concrete;
*5 Suppression chamber: Part of the primary containment vessel that holds water.

Contaminated water countermeasures

At the Fukushima Daiichi Nuclear Power Station (Fukushima Daiichi), we have received the cooperation of a great many people in order to implement countermeasures for contaminated water containing highly concentrated radioactive substances that was generated during the accident. Since our measures for removing radioactive substances contained in this contaminated water, the storage status of treated water, and our plans for disposing of this water in the future are issues of great concern to shareholders and investors, we've created this Q&A page to provide information that is accurate as of the current point in time based upon questions that we have received.

Approximately how much contaminated water is being generated daily at Fukushima Daiichi, and how are radioactive substances being removed from the contaminated water?

- At current time approximately 140m³ of contaminated water is being generated daily. The contaminated water is subjected to continuous treatment using multi-nuclide removal equipment called the Advanced Liquid Processing System (ALPS)
- ALPS has the ability to remove radioactive substances (excluding tritium) to the point where concentrations fall below "legally required concentration limits (standards for discharge into the environment)" stipulated by government regulations.

How much contaminated water is currently being stored on-site at Fukushima Daiichi?

- Currently, approximately 1,270,000m³ of treated water, from which radioactive substances in contaminated water have been removed to reduce risks, is being stored on site. (As of June 17, 2021)

What are the characteristics of treated water being stored?

- ALPS treated water currently being stored has had most of the radioactive nuclides, with the exception of tritium, removed from it.
- However, due to equipment malfunctions when the system was first put into operation and operating policies when treatment began, the sum of the ratios of legally required concentrations equals or exceeds 1 for approximately 70% of the water being stored.
- Before discharging treated water into the environment, treated water for which the sum of the ratios of legally required concentrations equals or exceeds 1 will be subject to secondary treatment to reduce the amount of radioactive substances as much as possible and ensure that the sum of the ratios of legally required concentrations is less than 1.

I think the local residents need to be in agreement if you're going to discharge treated water that contains tritium into the ocean environment. What are you currently doing to obtain their understanding?

- In regards to treated water that contains tritium, at the fifth Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning Issues held on April 13, 2021 a decision was made about the government's basic policy on the handling of ALPS treated water at Tokyo Electric Power Company Holdings' Fukushima Daiichi Nuclear Power Station.
- Based on the government's policy, TEPCO announced its plan for carrying out this policy on April 16 of the same year. In this plan we state that we will:
  (1) Ensure that the water to be discharged is safe.
  (2) Ensure transparency/objectivity through third-party assessments and expand/strengthen monitoring.
  (3) Prevent leaks from tanks.
  (4) Convey information carefully and in an easy-to-understand manner, and put all efforts into mitigating reputational damage.
  (5) Quickly provide suitable compensation for reputational damage if such damage were to occur in spite of these countermeasures.
- Since announcement of our plan, we have provided briefings for local government leaders, assembly members, and officials from the fisheries industry.
- The opinions we receive from officials will reflected in the design and operation methods of necessary equipment.