Progress of Reconstruction in Fukushima Daiichi NPS Surrounding Area

Ministry of Economy, Trade and Industry (METI)

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Agenda

1. Current Status of Fukushima Daiichi NPS Surrounding Area

2. Progress of Reconstruction

3. Next Step

1. Current Status of Fukushima Daiichi NPS Surrounding Area

Comparison of the Scale of Nuclear Power Plant Accidents Between Chernobyl & Fukushima Daiichi NPS

- The amount of cesium and iodine released at Fukushima Daiichi were around 10–40% of Chernobyl. Radionuclides with long half-lives such as plutonium were only around 0.02– 0.1%.
- Compared to the Chernobyl, the Fukushima Daiichi has <u>a small-scale high-concentration</u> <u>contaminated area</u>.



Progress of Disaster Recovery

Decontamination Work and Construction of interim storage facility(ISF)

ISF is installed to manage and store the soil and waste generated from off site decontamination work as well as the specified waste (> 100,000 Bq /kg) intensively and safely until the final disposal.



Development of Specified Reconstruction and Revitalization Base Areas



The Base area in Futaba Town where the Fukushima Daiichi NPS is located

As radiation doses have decreased in some Restricted Areas, the GOJ has developed "Specified Reconstruction and Revitalization Base Areas" with the aim of lifting evacuation orders and permitting inhabitation.

< 2022 >

Katsurao Village, Okuma Town, Futaba Town

< 2023 spring >

Tomioka Town, Namie Town, litate Village

Referenced from: http://josen.env.go.jp/chukanchozou/facility/effort/

Introduction of new institution for return to hometown

Specific Revitalized Residential Areas

- The evacuation order for six <u>"Specified Reconstruction and</u> <u>Revitalization Base Areas</u>" in difficult-to-return zone has been lifted until May 2023.
- The remaining areas in the difficult-to-return zone are the last challenge for the return policy.
- Original residents strongly desire to return to their hometowns.



In order to return all residents who wish to return in the 2020s, The Fukushima Special Measures Law was amended to establish new institution, "Specific Revitalized Residential Areas."

Specified Reconstruction and Revitalization Base Areas (6 Areas completed)

Specific Revitalized Residential Areas (New institution \sim in the 2020s)

Difficult-to-return zone

Changing Air Dose Rate and Lifting Evacuation Order

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 Average air dose rate decreased by 80% compared to in November 2011. (within 80km from Fukushima Daiichi NPS) Measurements from a monitoring post (West gate) at the site boundary of the Fukushima Daiichi NPS



* Changes in monthly average levels measured at a monitoring post (MP.5) at the site boundary of the Fukushima Daiichi NPS

Radiation levels at the site boundary have sufficiently decreased compared to levels immediately after the accident.

	maximum figures	Current status
Areas under evacuation orders	1,150 km² August 2013	309 km²(27%) As of May 2023
The number of evacuees in Fukushima Prefecture	164,865 May 2012	30,231 As of May 2022

Referenced from https:://www.reconstruction.go.jp/english/topics/Progress_to_date/English_August_2022_genjoutorikumi.pdf

2. Progress of Reconstruction- In Parallel with Decommissioning -

Progress of Reconstruction (2012~2013)

Decommissioning Roadmap

Period up to start of fuel removal

Period up to start of fuel debris retrieval

Period up to start of end of decommissioning

2012



Unit 4: Removal of rubble on reactor building roof completed (Oct)

2013



- Unit 4: Fuel removal from spent fuel pool and transfer to common pool started (Nov)
- Test operation of multi-nuclide removal equipment (ALPS) started (Mar)

 First commercial fishing resumed in Fukushima offshore



Snow crab



Yanagi octopus





Photo: Paddy fields in Tamura City (Shooting date: June 4, 2013)

Referenced from: https://www.meti.go.jp/earthquake/nuclear/osensuitaisaku/committee/takakusyu/pdf/003_04_00.pdf Referenced from: https://www.pref.fukushima.lg.jp/uploaded/attachment/266089.pdf

Japanese flying squid

Referenced from: https://www.mext.go.jp/b_menu/shingi/chousa/kaihatu/016/shiryo/__icsFiles/afieldfile/2013/ 09/10/1339417_1_2.pdf

Progress of Reconstruction (2014~2015)

Decommissioning Roadmap

Period up to start of fuel removal

Period up to start of fuel debris retrieval

Period up to start of end of decommissioning

2014



Unit 4: Fuel removal (1,535 assemblies) from spent fuel pool completed (Dec)



2015

- Sub-drain pumping and discharge started (Sep)
- Sea-side impermeable wall closed (Oct)
- Unit 3: Removal of large rubble (fuel handling machine) from spent fuel pools completed (Aug)

 Evacuation order lifted for the first time in some areas (Tamura City)



Reopening of school

Referenced from:

https://www.reconstruction.go.jp/portal/chiiki/2014/20140421100603.html?index_no=0

 Joban Expressway is fully reopened (major arterial road in the disaster area)



Referenced from:

https://www.reconstruction.go.jp/portal/chiiki/2015/20150319152955.html?index_no=0

Progress of Reconstruction (2016~2018)



(Jul)

 Generation of contaminated water reduced to one-third of the amount before (from 540 m3 to 170 m3/day)

Fukushima Robot Test Field in service

completed



(fully opened in 2020 after a phase-in)

J-Village reopened



(fully opened in 2019)

Referenced from: https://www.facebook.com/robottestfield/photos/pb.100063135885143.-2207520000../335919594999936/?type=3

Progress of Reconstruction (2019~2021)

Decommissioning Roadmap Period up to start of fuel Period up to start of end of Period up to start of fuel debris retrieval removal decommissioning 2020 2019 2021 Unit3: Removal of all Complete the treatment of Unit 3: Fuel stagnant water in buildings 566 fuel assemblies removal from Generation of completed (Feb)

contaminated water

reduced to 140 m3/day

Evaluation order partially lifted in Okuma Town \geq where the Fukushima Daiichi NPS is located, allowing municipal services to start at a new town hall building

spent fuel pool

started (Apr)



Fukushima Hydrogen Energy **Research Field opened**



Referenced from: https://www.nedo.go.jp/news/press/AA5_101293.html

Progress of Reconstruction (2022)



(Auction at Ukedo fishery harbor)

(Started to recruit tenants from 2022)

Progress of Reconstruction (2023)



(Official Shop "Air KAORU" was also opened from April, 2023)

(Demonstration experiment was started from May, 2023)

Discharge of ALPS Treated water (1)

IAEA Comprehensive Report



Publication of the IAEA Comprehensive Report on the Safety Review of the ALPS Treated Water at TEPCO's Fukushima Daiichi NPS

(Photo: Cabinet Public Affairs Office)

The IAEA Comprehensive Report states the following 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."

(Photo: IAEA Website)

Discharge of ALPS Treated water (2) Environmental Monitoring after discharge

- GoJ and TEPCO have conducted environmental monitoring and daily published results showing the first discharge has been carried out safely.
- In addition, the IAEA has conducted independent sampling and measurement of the sea water, and confirmed that tritium levels are below Japan's operational limit to stop the release.

	TEPCO	MOE	FA
Subject for Sampling	Seawater: 10 point	Seawater: 11 point	Fish: 2 sample
Mointering frequency	Every day *around one month after discharge	Every week *around three month after discharge	Every day *around one month after discharge

The website which shows the monitoring results \mathbf{V}



%Fukushima Prefectural Government also conducted rapid tritium analysis%NRA conducts the thorough examination (around one month required)

Up to now, the concentration of tritium is confirmed below the operational limit. The discharge is being conducted safely.

3. Next Step

Next Step ①

Revival of Tradisional Sakura Festival and Gathering People

- Yonomori Sakura Festival is being held in Tomioka, another town near the Fukushima Daiichi NPS.
- A row of beautiful cherry blossoms trees was loved by many people.





Next Step 2

Promoting New Industries and Innovation (the Fukushima Innovation Coast Framework)

- According to the new policy concept, GoJ aims to create new industries (6 areas) and innovation in the coastal Fukushima (Hamadori).
- GoJ established new research institute in coastal Fukushima in Arpril 2023.



Thank you for your support for Fukushima

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