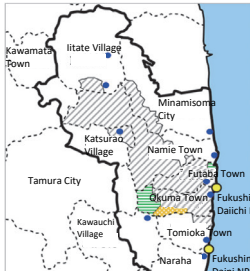


Progress of Disposal of Disaster Waste Directly Governed by the National Government in Designated Areas in Fukushima Prefecture



As of April 1, 2017

- Contaminated Waste Management Areas
- Habitation Restricted Areas
- Temporary Incineration Facilities (including planned facilities and those already demolished, etc.)
- Preparation Areas for Lift of Evacuation Order
- Areas where Returning is Difficult

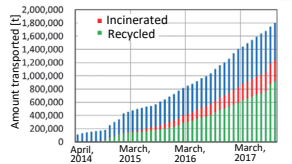


Temporary Incineration Facility in Okuma Town (December 2017)

Disaster waste has been disposed of based on the Treatment Plan on Waste within the Management Areas (partial revision on December 26, 2013).

[Amount of Waste within the Management Areas having been transported to Temporary Storage Sites]

OAs of the end of November 2017, a total of approx. 1.80 million tons of waste had been transported to Temporary Storage Sites (of which, approx. 320,000 tons were incinerated and approx. 920,000 tons were recycled).



Amount of Waste within the Management Areas having been transported from designated areas to Temporary Storage Sites

[Removal of tsunami rubble]

O Tsunami rubble in former Restricted Areas was all transported to Temporary Storage Sites in March 2016, except for such rubble left in Areas where Returning is Difficult.

[Installation of Temporary Incineration Facilities]

Now treating disaster waste, etc.	Tomioka Town, Minamisoma City, Katsurao Village, Namie Town, Iitate Village (Warabidaira district), Naraha Town and Okuma Town
Preparing for placing orders	Futaba Town
Disposal of disaster waste completed	Kawauchi Village and Iitate Village (Komiya district)

* Tamura City and Kawamata Town use existing waste disposal facilities for disposing of disaster waste.



Temporary Incineration Facility in Naraha Town (Oct. 2016)

Prepared by the Ministry of the Environment

Waste within the Management Areas in Fukushima Prefecture has been disposed of based on the Plan on Waste within the Management Areas, which was revised in December 2013.

Such waste, which includes tsunami rubble, debris of damaged houses, and waste from houses after cleaning-up, has been transported sequentially to Temporary Storage Sites. As of the end of November 2017, a total of approx. 1.8 million tons had already been transported. Transported waste is recycled as much as possible.

It was decided to incinerate inflammable waste to reduce volume at provisional incineration facilities to be constructed at ten locations in nine municipalities. As of January 2018, seven such facilities were in operation and waste is being steadily disposed of and treated.

Included in this reference material on February 28, 2018

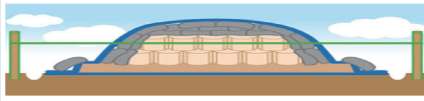
Ensuring Safety for Temporary Storage of Designated Waste

Temporary storage work (in the case of agricultural by-products)



Structure of a Temporary Storage Site (in the case of agricultural by-products)

- Take measures to prevent scattering and runoff of waste
- Take required measures against radiation (isolation or shielding using sandbags, etc.)
- Take measures to prevent infiltration of rainwater using impermeable sheet, etc.



Checking of storage status

The status of storage at Temporary Storage Sites is to be checked to ensure that designated waste is properly stored in compliance with the standards, etc. specified in the Act on Special Measures.



Staff of the Regional Environmental Office checking the storage status

Prepared based on the website, "Information on Disposal of Radioactive Waste," of the Ministry of the Environment

Designated waste includes ash left after incinerating waste contaminated with radioactive materials, sludge generated through sewage treatment, soil that remains at purification plants to supply tap water (p.31 of Vol. 2, "Waterworks System"), agricultural by-products such as rice straw and pasture grass, etc.

As of September 30, 2017, there was a total of over 200,000 tons of designated waste in 11 prefectures including Tokyo Metropolis. Such waste is temporarily being stored at incineration facilities, purification plants, sewage treatment facilities, farmland, etc., where it was generated, until the national government establishes a proper disposal system.

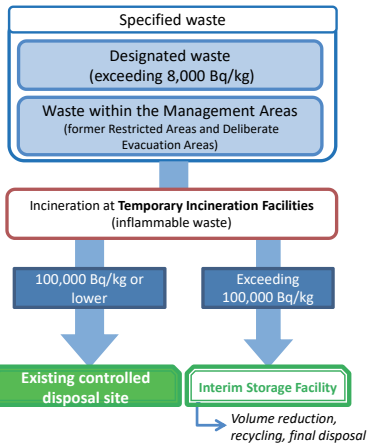
The waste is to be covered with impermeable sheets, etc. to prevent infiltration of rainwater and measures to prevent scattering and runoff of the waste are supposed to be taken voluntarily in line with the guidelines and the Act on Special Measures Concerning the Handling of Environment Pollution by Radioactive Materials. Officials of the Ministry of the Environment visit various locations and check the status of temporary storage periodically to ensure safe and proper storage of designated waste.

Included in this reference material on January 18, 2016

Updated on February 28, 2018

Procedures for Disposal of Designated Waste in Fukushima Prefecture

The Ministry of the Environment has been carrying out a program to reduce volume and stabilize properties of designated waste through incineration and drying, etc. With regard to designated waste generated in Fukushima Prefecture, waste with radioactivity concentrations exceeding 8,000 Bq/kg but 100,000 Bq/kg or lower is to be transported to the existing controlled disposal site, while waste with radioactivity concentrations exceeding 100,000 Bq/kg is to be transported to the Interim Storage Facility.



Volume reduction project

Sewage sludge

Terminal treatment plant in Horikawa Town, Fukushima City

Drying treatment of dehydrated sludge, etc. was completed at the end of October 2014 and the plant was demolished at the end of March 2016.



Fukushima Prefecture Central Purification Center (Koriyama City)

Incineration of dehydrated sludge, etc. was completed in March 2014, and Fukushima Prefecture took over the work and incinerated waste with radioactivity concentrations of 8,000 Bq/kg or lower and the incineration work was completed at the end of May 2016.



Samegawa Village

Incineration of agricultural waste was completed at the end of July 2015.

Switching stations (Tamura City and Kawauchi Village)

Volume reduction of agricultural waste generated in 24 municipalities in the central and southern parts of Fukushima Prefecture; Operation started in June 2017.



Agricultural waste, etc.

Warabidaira District, Iitate Village

Volume reduction of contaminated waste generated in Iitate Village and surrounding five municipalities; A Temporary Incineration Facility started operation in January 2016 and a facility to make recycled materials constructed on the same site also started operation in April 2016.

Adachi District (Nihonmatsu City)

Volume reduction of agricultural waste and inflammable waste generated from decontamination activities in three municipalities in the Adachi District (Nihonmatsu City, Motomiya City and Otama Village); Preparation for the construction work is underway.

Prepared by the Ministry of the Environment

With regard to disposal of designated waste, the national government is committed to securing long-term management facilities required for the prefectures where a large amount of designated waste has been generated and storage facilities are in urgent need, while considering the utilization of existing waste disposal facilities.

In Fukushima Prefecture, waste with radioactivity concentrations exceeding 8,000 Bq/kg but 100,000 Bq/kg or lower is to be transported to the existing controlled disposal site, while waste with radioactivity concentrations exceeding 100,000 Bq/kg is to be transported to the Interim Storage Facility.

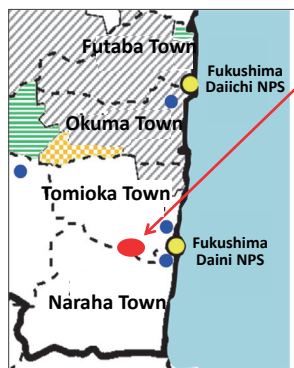
Additionally, designated waste is incinerated, dried or otherwise handled to reduce volume and stabilize their properties in Fukushima Prefecture.

Included in this reference material on January 18, 2016

Updated on February 28, 2018

Landfill Disposal Plan of Specified Waste Utilizing the Controlled Disposal Site

In order for reconstruction of eight municipalities in Futaba County and ultimately the entirety of Fukushima Prefecture, the issue of waste contaminated with radioactive materials needs to be solved as early as possible. It is planned to safely and promptly bury waste with radioactivity concentrations not exceeding 100,000 Bq/kg at the existing controlled disposal site, former Fukushima Ecotec Clean Center. Transport of specified waste was commenced in November 2017.



● Temporary Incineration Facilities (including planned facilities and those already demolished, etc.)
 ■ Contaminated Waste Management Areas
 ■ Habitation Restricted Areas
 ■ Areas where Returning is Difficult
 ■ Preparation Areas for Lift-out Evacuation Order

Prepared by the Ministry of the Environment

Specified Waste Landfill Disposal Facility (Former Fukushima Ecotec Clean Center)

[Outline of the facility]

- Location: In Tomioka Town (transport via Naraha Town)
- Area: approx. 9.4 ha
- Capacity: approx. 960,000 m³ (Possible landfill capacity: approx. 650,000 m³)

Outline of the landfill disposal program

○ Waste to be buried

- Household refuse of returned residents in eight municipalities in Futaba County < approx. 27,000 m³ >
- Waste within the Management Areas < approx. 445,000 m³ >
- Designated waste in Fukushima Prefecture < approx. 182,000 m³ >

○ Period

- Household refuse from eight municipalities in Futaba County: for approx. 10 years
- Waste within the Management Areas and designated waste: for approx. 6 years

○ Landfill disposal, radiation monitoring, etc.

- Multiple safety measures should be taken to prevent leakage of radioactive materials such as curbing elution of radioactive cesium or infiltration of rainwater.
- The status of seepage control and leachate treatment facility, etc. is to be periodically checked and ambient dose rates and radioactivity concentrations of groundwater, etc. should be monitored.

○ Responsibility of the Ministry of the Environment and its management system

- Based on the Act on Special Measures, the Ministry of the Environment will serve as the responsible entity and initially nationalize the disposal site and responsibly conduct landfill disposal of specified waste.
- The Ministry of the Environment constantly stations a supervisor at a newly established local office, thereby ensuring a system to properly manage landfill disposal and related facilities.

Waste with radioactivity concentrations not exceeding 100,000 Bq/kg generated in Fukushima Prefecture is to be buried promptly at the existing controlled disposal site.

In order to implement this program, the national government first asked local communities for consent to accept the construction of an Interim Storage Facility in December 2013, and then provided explanations to the authorities, assemblies and residents of Tomioka Town and Naraha Town.

In December 2015, consent was obtained from Fukushima Prefecture, Tomioka Town and Naraha Town for the implementation of this program. The national government nationalized the existing controlled disposal site in April 2016 and concluded a safety agreement with Fukushima Prefecture and the two municipalities in June 2016. Preparatory work was conducted thereafter and the transport of waste to the facility was commenced in November 2017.

In order to steadily facilitate disposal of waste contaminated with radioactive materials, utmost efforts will be continued to properly carry out this program with safety as the top priority and to build a stronger relationship of trust with local residents.

Included in this reference material on January 18, 2016

Updated on February 28, 2018

Status of the Five Prefectures concerning Designated Waste

< Miyagi Prefecture > • Municipal mayors' conference (14 meetings) [Oct. 2012 to July 2017]	< Tochigi Prefecture > • Municipal mayors' conference (8 meetings) [April 2013 to Oct. 2016]	< Chiba Prefecture > • Municipal mayors' conference (4 meetings) [April 2013 to April 2014]	< Ibaraki Prefecture > • Municipal mayors' conference (4 meetings) [April 2013 to Jan. 2015]	< Gunma Prefecture > • Municipal mayors' conference (3 meetings) [April 2013 to Dec. 2016]
<p>2014 Jan.: 3 candidate sites for detailed survey were presented (Fukayamadake, Kurihara City; Shimohara, Taiwa-cho; Tashirodake, Kami Town). Aug.: The prefectural governor announced the acceptance of a detailed survey as a consensus of all municipal mayors. Aug.: A detailed survey was commenced. An on-site survey was not possible due to protests by local residents.</p> <p>2016 March: Results of the remeasurement for designated waste were released. Nov.: Results of the remeasurement for other types of designated waste were released.</p> <p>2017 June: The prefecture presented draft disposal policies such as to require each area to independently incinerate contaminated waste generated therein, and each municipality would carry out further municipality-level discussions on the draft. July: The draft disposal policies were agreed as they are.</p>	<p>2014 July: One candidate site for detailed survey was presented (Terashimairi, Shiyoia Town).</p> <p>2016 Oct.: Results of the remeasurement for designated waste were released and future directions were presented.</p> <p>2017 July: Meeting of mayors of municipalities concerning measures to ease burdens of farm households storing waste by themselves → Draft of Policy for measures to ease burdens of farm households storing waste by themselves were presented.</p>	<p>2015 April: 1 candidate site for detailed survey was presented. (Part of the premises of Tokyo Electric Power Company (TEPCO)'s Chiba Thermal Power Station (Chuo Ward, Chiba City))</p> <p>2016 July: Designation was removed for designated waste whose radioactivity concentrations had become lower than 8,000 Bq/kg.</p>	<p>2015 April: Meeting of mayors of municipalities where waste is temporarily stored</p> <p>2016 Feb.: 2nd meeting of mayors of municipalities where waste is temporarily stored → The policy to continue on-site storage and promote staged disposal was determined.</p> <p>2017 March: Results of the remeasurement for designated waste, etc. in the prefecture were released.</p>	<p>2016 Dec.: The policy to continue on-site storage and promote staged disposal was determined.</p>
(Reference) Expert meeting of the Ministry of the Environment				
The Ministry of the Environment had meetings (nine times) to discuss the safety of long-term management facilities and process of selecting candidate sites from a scientific and technological point of view, in tandem with the municipal mayors' conferences held by these prefectures. [March 2013 to March 2016]				
<small>Prepared based on reference material for the Third Panel on Safety Measures against Radioactive Materials (Nov. 2015), Ministry of the Environment</small>				

Prefectures other than Fukushima Prefecture which are in urgent need to secure Temporary Storage Sites for designated waste (Miyagi Prefecture, Tochigi Prefecture, Chiba Prefecture, Ibaraki Prefecture and Gunma Prefecture) are taking measures in accordance with the circumstances of respective prefectures. They ascertain the current status through the measurement of radioactivity concentrations, based on discussions at municipal mayors' conferences.

Regarding candidate sites for detailed surveys, Miyagi, Tochigi and Chiba Prefectures followed selection methods determined through discussions at expert meetings and municipal mayors' conferences, and presented selected candidate sites in January 2014, July 2014 and April 2015, respectively. However, detailed surveys have not been conducted smoothly or not been conducted due to protests by local residents.

In the meantime, Miyagi Prefecture determined its policy in July 2017 to the first dispose of contaminated waste with radioactivity concentrations not exceeding 8,000 Bq/kg, excluding designated waste, at respective areas, and is now making adjustments for commencing test incineration.

In July 2017, the Ministry of the Environment presented a provisional policy for volume reduction and centralized collection of designated waste, targeting Tochigi Prefecture and municipalities storing waste, with the aim of easing burdens of farm households that have been storing waste by themselves, while maintaining the basic policy to ultimately develop long-term management facilities. Accordingly, Tochigi Prefecture is now making adjustments for commencing disposal based on the presented provisional policy.

Chiba Prefecture is also making efforts to obtain understanding of local residents for the implementation of a detailed survey concerning long-term management facilities.

Ibaraki and Gunma Prefectures determined the policies to continue on-site storage and promote staged disposal respectively in February 2016 and December 2016. Based on the determined policies, both prefectures will repair or reinforce storage sites as necessary and will dispose of designated waste whose radioactivity concentrations have reduced to 8,000 Bq/kg or lower at existing disposal facilities in a staged manner.

Included in this reference material on March 31, 2016

Updated on February 28, 2018