Environmental Remediation in Japan

March 2018

Ministry of the Environment, Japan
1. Background and Policy Framework …2

2. Decontamination in and around Fukushima …5

3. Interim Storage Facility …19

4. Communication to the Public and International Societies …30
Radioactive Pollution Caused by the Accident at TEPCO’s Fukushima Dai-ichi NPS

Aircraft monitoring survey by MEXT/Japan and DOE/US (as of Apr. 29, 2011)

- Kawauchi
- Katsurao
- Iitate
- Kawamata
- Minamisoma
- Namie
- Futaba
- Okuma
- Tomioka
- Naraha

Diagram of the areas to which evacuation order were issued (As of April 1, 2017)

- Areas where Returning is Difficult (50 mSv/y ~)
- Habitation Restricted Area (20 mSv/y ~ 50 mSv/y)
- Preparation Areas for Lift of Evacuation Order (~20 mSv/y)
- Evacuation orders were lifted
Decontamination based on the “Act on Special Measures”

1) Special Decontamination Area (*)
   (80,000 residents, 1,150 km²)

   Designation of SDA by the Minister

   Development of the decontamination implementation plan in the SDA by the Minister

   Implementation of decontamination by the national government

2) Intensive Contamination Survey Area
   (6,900,000 residents, 24,000 km²)

   Designation of ICSA by the Minister
   (Areas where air dose rate is 0.23μSv/h or more)
   ※0.23μSv/h is a criterion for designation of ICSA and not a decontamination target

   Survey measurement by the mayors

   Development of the decontamination implementation plan by the mayors

   Implementation of decontamination by the municipalities, etc.
   (The national government allocates budgets.)

* Decontamination at Fukushima Daiichi: Implemented by TEPCO

Note: The air dose rate 0.23μSv/h corresponds to a cautiously estimated individual exposure dose of 1mSv/y assuming that people spend
① 8 hours outside  ② 16 hours in a wooden house with a low shielding rate in a day
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Formulation of the Decontamination Guidelines

- Technical guidelines for carrying out decontamination
- Developed to complement the Ordinance of the Ministry of the Environment
- Used as reference when contracting decontamination projects

Contents
1. Guidelines on the methods of investigating and measuring environmental pollution in Intensive Contamination Survey Areas
2. Guidelines pertaining to measures on decontamination
3. Guidelines pertaining to the collection and transportation of the removed soil
4. Guidelines pertaining to the storage of removed soil

URL:
Techniques Used for Decontamination

○ Houses, buildings
  Removing deposits from the roof, deck and gutters
  Wiping off roofs and walls, high-pressure washing etc.

○ Gardens and trees
  Mowing, removing fallen leaves, topsoil stripping etc.

○ Roads
  Removing deposits in ditches, high-pressure washing etc.
  Decontaminating roofing tiles (by wiping)
  Decontaminating paved surfaces (by a collective type high-pressure water cleaner)
  Decontaminating gardens (by removing soils etc.)
Techniques Used for Decontamination ②

- Schoolyards, gardens and parks
  Stripping soils and topsoil etc.
- Farmlands
  Reverse tillage, stripping topsoil etc.
- Forests and woods
  Removing fallen leaves and lower twigs, pruning etc.

Decontaminating a schoolyard

Decontaminating a forest (by removing fallen leaves)

Decontaminating a grass plot

Photo provided by: Japanese Society of Turf grass Science

Photo provided by: JAEA
Municipality

Evacuation order was lifted on

Tamura city  April 1, 2014
Kawauchi village  October 1, 2014
Naraha town  September 5, 2015
Katsurao village  June 12, 2016
Minamisoma city  July 12, 2016
Iitate village  March 31, 2017
Kawamata village  March 31, 2017
Namie town  March 31, 2017
Tomioka town  April 1, 2017

Progress in the Special Decontamination Area ① (as of April 1, 2017)

Municipality  Completion of decontamination

Tamura city  June 2013
Naraha town  March 2014
Kawauchi village  March 2014
Okuma town  March 2014
Katsurao village  December 2015
Kawamata town  December 2015
Futaba town  March 2016
Iitate village  December 2016
Tomioka town  January 2017
Minamisoma March 2017
Namie  March 2017
Decontamination works in following municipalities have been completed by the end of March 2017 as the Government target

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Residential area</th>
<th>Farmland</th>
<th>Forest</th>
<th>Road</th>
<th>Evacuation order was lifted on</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of</td>
<td>Implemented area</td>
<td>Implemented area</td>
<td>Implemented area</td>
<td>date</td>
</tr>
<tr>
<td></td>
<td>implementated</td>
<td>ha</td>
<td>ha</td>
<td>ha</td>
<td></td>
</tr>
<tr>
<td>Minamisoma</td>
<td>4,500</td>
<td>1,700ha</td>
<td>1,300ha</td>
<td>270ha</td>
<td>July 12, 2016</td>
</tr>
<tr>
<td>Namie</td>
<td>5,600</td>
<td>1,400ha</td>
<td>390ha</td>
<td>210ha</td>
<td>March 31, 2017</td>
</tr>
<tr>
<td>Tomioka</td>
<td>6,000</td>
<td>750ha</td>
<td>510ha</td>
<td>170ha</td>
<td>April 1, 2017</td>
</tr>
<tr>
<td>Iitate</td>
<td>2,000</td>
<td>2,100ha</td>
<td>1,500ha</td>
<td>330ha</td>
<td>March 31, 2017</td>
</tr>
<tr>
<td>Futaba</td>
<td>97</td>
<td>100ha</td>
<td>6.2ha</td>
<td>8.4ha</td>
<td></td>
</tr>
<tr>
<td>Kawamata</td>
<td>360</td>
<td>600ha</td>
<td>510ha</td>
<td>71ha</td>
<td>March 31, 2017</td>
</tr>
<tr>
<td>Katsurao</td>
<td>460</td>
<td>570ha</td>
<td>660ha</td>
<td>95ha</td>
<td>June 12, 2016</td>
</tr>
<tr>
<td>Okuma</td>
<td>180</td>
<td>170ha</td>
<td>160ha</td>
<td>31ha</td>
<td></td>
</tr>
<tr>
<td>Kawauchi</td>
<td>160</td>
<td>130ha</td>
<td>200ha</td>
<td>38ha</td>
<td>Former Preparation Areas for lift of Evacuation Order : October 1, 2014 Former Habitation Restricted Areas: June 14, 2016</td>
</tr>
<tr>
<td>Naraha</td>
<td>2,600</td>
<td>830</td>
<td>470ha</td>
<td>170ha</td>
<td>September 5, 2015</td>
</tr>
<tr>
<td>Tamura</td>
<td>140</td>
<td>140ha</td>
<td>190ha</td>
<td>29ha</td>
<td>April 1, 2014</td>
</tr>
<tr>
<td><strong>Total Number</strong></td>
<td><strong>22,000</strong></td>
<td><strong>8,500ha</strong></td>
<td><strong>5,800ha</strong></td>
<td><strong>1,400ha</strong></td>
<td></td>
</tr>
</tbody>
</table>

- “Forest” means that is close to residential area
- MOE continues decontamination works at areas where residents’ consents are newly obtained
Whole area decontamination was completed on March 19, 2018

The progress of decontamination

- **In Fukushima Prefecture**: (as of March 19, 2018)
  Residential houses / Public facilities / Roads / Farmland & meadows / Forests in living areas:
  Completed in all categories

- **Outside Fukushima Prefecture**: (as of the end of March 2017)
  Residential houses / Schools & nurseries / Parks, sports facilities / Roads / Farmland & meadows / Forests in living areas:
  Completed in all categories
### Progress in the Intensive Contamination Survey Area

#### Within Fukushima Pref. (as of the end of February 2018)

<table>
<thead>
<tr>
<th>Ordered</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordering ratio (%)</td>
<td>Number of ordering</td>
</tr>
<tr>
<td>Residential houses</td>
<td>100%</td>
</tr>
<tr>
<td>Public facilities</td>
<td>100%</td>
</tr>
<tr>
<td>Roads (km)</td>
<td>100%</td>
</tr>
<tr>
<td>Farmland / meadows (ha)</td>
<td>100%</td>
</tr>
<tr>
<td>Forests in living area (ha)</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Based on the investigation result released by Fukushima Prefecture on February 20, 2018. The number of planning might be revised in future.

#### Outside Fukushima Pref. (as of the end of March 2017)

<table>
<thead>
<tr>
<th>Ordered</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordering ratio (%)</td>
<td>Number of ordering</td>
</tr>
<tr>
<td>Residential houses</td>
<td>100%</td>
</tr>
<tr>
<td>Public facilities</td>
<td>100%</td>
</tr>
<tr>
<td>Parks / sport facilities</td>
<td>100%</td>
</tr>
<tr>
<td>Other facilities</td>
<td>100%</td>
</tr>
<tr>
<td>Roads (km)</td>
<td>100%</td>
</tr>
<tr>
<td>Farmland / meadows (ha)</td>
<td>100%</td>
</tr>
<tr>
<td>Forests in living area (ha)</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: The number of planning is the total number as of May 12, 2017.
Storage in Temporary Storage Sites (TSS)

♦ Basic structure of a TSS / Routine management & checkup (A case in the SDA)

- A storage container with removed soil
- A shielding-effect sandbag with non-removed soil

Covering sheet (waterproof with ventilation or impermeable sheet)
Heat radiation (gas venting) pipe
Groundwater monitoring
Water collection tank
Bottom sheet (impermeable)

♦ Number of TSS and the volume of removed soil

※The number in SDA is as of the end of January 2018 and the number in ICSA is only in Fukushima Prefecture as of the end of September 2017

<table>
<thead>
<tr>
<th></th>
<th>Number of TSS</th>
<th>Number of storage site</th>
<th>Volume of removed soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDA</td>
<td>241</td>
<td>—</td>
<td>7,310,305 bags</td>
</tr>
<tr>
<td>ICSA</td>
<td>843</td>
<td>137,266</td>
<td>5,995,220 m³</td>
</tr>
</tbody>
</table>

♦ Storage in TSS～Transfer～Restore to original form～Return of land and extension of storage period
The chart shows the air dose rate average in each category (aggregated data of measuring points). Post-decontamination monitoring was implemented after 6 months to a year after the decontamination work. The latest result of post-decontamination monitoring in municipalities were summarized (the first or the second)

[Implementation period] • Monitoring before decontamination Nov.2011 - July 2016

※Only in areas with the data, excluding Areas where Returning is Difficult
The frequency distribution chart shows air dose rate of residential area, farmland, forest and road before & after decontamination (summarized data on measuring points)

In residential area, implemented measuring at about 10 points on each property in order to study average dose rate in an area

※Only in areas with the data, excluding Areas where Returning is Difficult
Compared air dose rate of 7 months after the accident (as of Nov. 5, 2011) with that of 67 months after the accident (as of Oct. 15, 2016), 71% decrease was found. This figure showed the decrease was faster than natural decay.

**Transition of the Air Dose Rate**

**Distribution map showing transition of the air dose rate within 80km radius**

After a month from the accident (April 2011)

After 67 months from the accident (October 2016)

“Result of airborne monitoring in and around Fukushima Prefecture (as of February 13, 2017, NSR)
The MOE has budgeted approx. JPY 2.9 trillion (= USD 27 billion) up to FY2017 for decontamination. 16,5mil.㎥ (among which approx. 16mil. ㎥ of the removed soil and wastes were estimated to have been removed until now *Estimation total number of SDA decontamination (as of January 2018) and ICSA decontamination (as of September 2017)

MOE is also working on "Decontamination Project Report“ to leave a record behind of the experiences, knowledge and lessons learned through decontamination works.

Scale of Whole Area Decontamination Project

• Total number of labor: approx. 13,600,000 workers
  ※ as of the end of January 2018

• Budget: approx. JPY 1.5 trillion
  ※ MOE’s budget until FY2017 (excluding unnecessary cost)

• Volume of the generated soil: approx. 9,000,000㎥
  From the above volume of soil already transported from TSS*: approx. 1,700,000㎥ (estimation as of the end of January 2018)

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Decontamination in SDA

Decontamination in ICSA

• Total number of labor: approx. over 18,000,000 workers
  ※ estimated from interviews with relevant municipalities

• Budget: approx. JPY 1.4 trillion
  (within Fukushima Pref. : approx. JPY 1.3 trillion, outside Fukushima Pref. : approx. JPY 5 billion
  ※MOE’s budget until FY2017 (excluding unnecessary cost)

• Volume of the generated soil: approx. 7,500,000㎥ (estimation)
  (within Fukushima 7,000,000㎥, outside Fukushima 500,000㎥, both are estimation)
  From the above volume of soil already transported from TSS*: approx. 1,300,000㎥ (as of the end of January 2017)

※Considered 1US$ =JPY107
Decontamination Report  (March 2015, MOEJ)

- A compilation of experiences to date on decontamination for the living environment conducted by the Ministry of the Environment

(Contents)
1. The basic features of off-site decontamination in Japan
2. Overview of decontamination procedures
3. Management and treatment of removed soil and waste
4. Management of decontamination project
5. Effects of decontamination
6. Overview, usage and applicable conditions, and verification of effects of decontamination technologies

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What is an Interim Storage Facility (ISF)?

♦ In Fukushima Prefecture, large quantities of removed soil and waste have been generated from decontamination activities.
♦ Currently, it is difficult to clarify methods of final disposal of such soil and waste.
♦ Until final disposal becomes available, it is necessary to establish an Interim Storage Facility (ISF) in order to manage and store soil and waste safely.

The following materials generated in Fukushima Prefecture will be stored in the ISF.
1. Soil and waste (such as fallen leaves and branches) generated from decontamination activities, which have been stored at the Temporary Storage Sites.

2. Incineration ash with radioactive concentration more than 100,000 Bq/kg.

♦ It is estimated that generated soil from decontamination will be approx. 16 ~22 mil. m³ after the volume reduction incineration (Ref: approximately 13~18 times as much as the volume of Tokyo Dome (1.24 mil. m³))
※ In considering the plan for the Interim Storage Facility, storage of products whose volume is difficult to estimate at this moment is also taken into account.
Soil storage facility started the operation in December 2017 in both Okuma and Futaba.

**Reception / Separation Facility**

- Roof
- Conveyor belt
- Container bag opener
- Sieving machine
- Container bag residue
- Plant
- Separated removed soil

**Soil Storage Facility**

- Unloading equipment
- Equipment for container bag opener
- Equipment for separation
- Storage
- Separated soil
- Conveyer belt w/roof
- Bulldozer
- Leachate treatment
- Outfall
- Retained water, etc.
- Leachate collection pipe
- Transport
- Seepage control
Transportation to the ISF

◆ In FY2017, approx. 500,000 m³ of removed soil is targeted to be transported

◆ In FY2018, approx. 1,800,000 m³ of removed soil will be transported to the ISF

◆ Safe and secure transportation will be sequentially conducted managing whole numbers of transport objects, managing traffic of trucks, and implementing environmental monitoring, and etc.

<Actual achievement in FY2017>

As of March 17, 2018

◆ Stored volume: 513,135 m³ (742,251 m³ in total)  
* Calculated on the assumption that the volume of a large bag is 1 m³

◆ Total number of trucks used: 85,071 (123,109 in total)
### Status of Planned Site for the ISF

As of the end of February 2018

<table>
<thead>
<tr>
<th>Whole Area approx. 1,600ha</th>
<th>Item</th>
<th>Whole area</th>
<th>Ratio to the whole area</th>
<th>Registration record detail (2,360pers.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private Land</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>approx. 1,270 ha (approx. 79%)</td>
<td>Landowners with contact information</td>
<td>approx. 1,220ha</td>
<td>approx. 76% ※Areas with owners’ contact information occupies approx. 96% to the total area</td>
<td>1,880 pers.</td>
</tr>
<tr>
<td></td>
<td>Property investigations accepted</td>
<td>approx. 1,170ha</td>
<td>approx. 73%</td>
<td>1,640 pers.</td>
</tr>
<tr>
<td></td>
<td>Property already investigated</td>
<td>approx. 1,160ha</td>
<td>approx. 73%</td>
<td>approx. 1,620 pers.</td>
</tr>
<tr>
<td></td>
<td>Contracted</td>
<td>approx. 844ha</td>
<td>approx. 52.8%</td>
<td>1,380 pers.</td>
</tr>
<tr>
<td><strong>National/ Municipality Land etc.</strong></td>
<td>Town owned -land</td>
<td>approx. 165ha</td>
<td>approx. 10.3%</td>
<td></td>
</tr>
<tr>
<td>approx. 330ha (approx. 21%)</td>
<td>National/ Municipality land/ Land without address</td>
<td>approx. 165ha</td>
<td>approx. 10.3%</td>
<td></td>
</tr>
<tr>
<td>FY</td>
<td>Land Acquisition</td>
<td>Volume of Transportation</td>
<td>Volume of soil generated from decontamination</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------------------</td>
<td>--------------------------</td>
<td>---------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>March 2015</td>
<td>Approx. 22 ha</td>
<td>&lt;Approx. 10.6 mil. m³&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation started</td>
<td>※Actual amount as of march 25, 2016</td>
<td>※Actual amount as of the end of Dec. 2015 ※Total amount of storage and amount already delivered</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Approx. 140 – 370 ha</td>
<td>Approx. 0.2 mil. m³</td>
<td>Approx. 16 – 22 mil. m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>※Estimated value based on decontamination implementation plan as of July 2013</td>
<td>&lt;approx. 18.7 – 28 mil. m³&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Approx. 270 -830 ha</td>
<td>Approx. 0.5 – 0.7 mil. m³</td>
<td>Among following items which are difficult to treat other than in ISF will be installed, but it is not included in above volume of soil generated from decontamination</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>Opening between Ryozan &amp; Soma IC (goal) Facilitation of Okuma IC completed (goal)</td>
<td>Approx. 400 – 940 ha</td>
<td>① Approx. 0.7mil. m³ of removed soil with radioactive concentration of less than 8,000Bq/kg ② Approx. 0.4 mil. m³ of waste generated from ISF construction (① &amp; ② will possibly be significantly decreased or increased after the incineration) ③ Volume of waste in the “Area where people have difficulties in returning for a long time” and in future follow-up decontamination which are both difficult to estimate for the moment</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>Facilitation of Futaba IC completed (goal)</td>
<td>Approx. 520 – 1,040 ha</td>
<td>① Approx. 400 – 940 ha ② Approx. 0.5 – 6.5 mil. m³</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>July: Tokyo Olympic and Paralympic will be held</td>
<td>Approx. 640 – 1,150 ha</td>
<td>③ Approx. 5 – 12.5 mil. m³ (3.5 – 8 mil. m³ until June)</td>
<td></td>
</tr>
</tbody>
</table>

※ This prospect will be reviewed according to the progress of ISF construction, as needed

<table>
<thead>
<tr>
<th>Prospect for 5year Ad-hoc Policy on Interim Storage Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Area for land acquisition will be estimated flexibly according to explanation phase to the landowners</td>
</tr>
<tr>
<td>② To construct facilities, it will need comprehensive area and 2/3 will be assumed to be used for facilitation. The possible volume for installation is to be 10,000 m³/ha and 140,000 m³/5ha for a storage facility, and will be installed from TSS to ISF sequentially</td>
</tr>
<tr>
<td>③ Approximate period from contract with operators to ISF operation: 3months for TSS, 6months for delivery &amp; separation, 12months for storage, 18months for incineration</td>
</tr>
<tr>
<td>④ On the premise that infrastructure construction on roads for Okuma and Futaba IC would proceed as planned, the maximum volume of possible transportation is estimated: 2mil. m³/y before the operation of both IC, 4mil. m³/y after Okuma IC &amp; before Futaba IC, 6mil. m³/y after the both ICs operation</td>
</tr>
</tbody>
</table>
Prospect for the volume of cumulative transportation (max.)

Prospect for the volume of cumulative transportation (min.)

Approx. 50,000 m³

Approx. 150,000 m³

Approx. 300,000 - 500,000 m³

(Tentative name)

Okuma IC in service

(Tentative name)

Futaba IC in service

1250 (at the end of FY2020)

500 (at the end of FY2020)
MOE conducts R&D to examine how the final disposal to be implemented taking into account the effect of radioactive decay and the potential of volume reduction and recycling

MOE disseminates, for public understanding, the information on recycling less radioactive material and the final disposal outside Fukushima Prefecture

(Review) 8 Steps towards the Final Disposal outside Fukushima Prefecture within 30 years from the Start of the ISF

- **STEP1:** Comprehension of trends in R&D domestically and internationally
- **STEP2:** Studying the direction of future R&D
- **STEP3:** Furthering R&D
- **STEP4:** Studying the direction of the final disposal, taking into account studies of possibilities of volume reduction and recycling
- **STEP5:** Investigation, review and adjustment concerning final disposal sites
- **STEP6:** Land preparation of final disposal sites
- **STEP7:** Installation of waste to final disposal sites
- **STEP8:** Completion of final disposal
Towards the final disposal of the removed soil outside Fukushima Pref., MOE will promote recycling of the soil after volume reduction technology as much as possible, which consequently would lead to reduce the volume of soil for the final disposal.

After clarifying the objectives and priority of technology development and volume reduction & recycling, basic technology development is planned to be completed within 10 years, then move onto a phase of treatment.

On the premise of securing safety, MOE will try to realize the recycling in the possible field, building public understandings for the safety.

Based on technology development and prospect of recycling in the future, MOE would propose some options for structure and necessary dimension of the final disposal.
【Basic Concept】

The removed soil should be used mainly for public projects as the controlled materials (with radioactivity level below 8,000Bq/kg in principle and set according to purpose) after necessary treatment, e.g. removal of debris, classification treatment, and be managed by the public authorities.

【Limited Use】

The use will be limited such as basic structure material of banking for coastal levee, seaside protection forest, or embankment materials for roads, which assumed not to be changed the form artificially for a long time period. It will be also used as covering soil for waste disposal site.

【Management by the public authorities】

- The criteria should be formulated based on the Act on Special Measures and be managed by MOE and public entities (municipalities, etc.)
- To be specific, in order to confine additional exposure dose as below 1mSv/y at the time of construction and below 0.01mSv/y at the time of service, radioactive level of recycled materials should be limited, covering soil should be installed, scatter and leakage should be prevented, ground form change should be observed, and the data should be recorded.

【Procedure of recycling】

To realize the recycling of the removed soil, demonstration and model projects based on concepts above should be implemented keeping the safety against radiation, studying specific verification of management method, and building stakeholders’ understandings.
Demonstration Project for Recycling in Minamisoma City

Demonstration project is currently being implemented in Minamisoma City, studying specifically on handling radiation during the procedure of recycling and ensure the quality of the recycled soil as construction material in order to promote safe recycling and reuse of the removed soil in a step by step manner.

1. Preliminary treatment / quality control process (April 2017-)

1. Open sandbags and remove large stones and debris
2. Further eliminate smaller debris
3. Classify soil by concentration
4. Control quality

- Control quality of soil to be used for embankment (such as water content and grain sizes)

2. Test embankment process (May 2017-)

5. Construct test embankment / Monitoring

- Construct a test embankment (covered with uncontaminated soil by 50cm
- Continue to measure the air dose rate and other indicators

Air dose rate was not much changed before and after opening of sandbags of the removed soil

During period of May - Sep. Not detectable for all radioactive materials in leachate

Check the air dose rate

Check the radioactive concentration of leachate

Prepare and keep records on site

【Result of council of advisers】
- Confirmed safety in this method for recycling demonstration
- To accumulate data continuously conducting demonstration project

- Total amount of soil in embankment: approx. 4,000 tons
- Recycled soil out of total soil: approx. 700 tons
- Average of radioactive concentration: 771Bq/kg

【Recycled soil】

【Uncontaminated soil】
Outline

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Cooperation with International Societies

Oct. 31-Nov. 1, 2016
The 5th Japan-UK Nuclear Dialogue (@Tokyo)

Nov. 15-16 2016
The 2nd IAEA-MOE Experts Meeting on Environment Remediation of Off-Site areas after the Fukushima Dai-ichi Nuclear Power Station Accident (@Tokyo)

Nov. 24, 2016
The 6th meeting of the Japan-France Nuclear Cooperation Committee (@Paris)

Dec. 5, 2016
The 4th Meeting of Japan-Ukraine Joint Committee for the cooperation to advance aftermath response to accidents at nuclear power stations (@Tokyo)

Apr. 17-21, 2017
The 3rd IAEA-MOE Experts Meeting on Environment Remediation of Off-Site areas after the Fukushima Dai-ichi Nuclear Power Station Accident (@Tokyo)

Oct. 26-27, 2017
The 6th Annual Japan-UK Nuclear Dialogue (@London)

Nov. 6-10, 2017
The 4th IAEA-MOE Experts Meeting on Environment Remediation of Off-Site areas after the Fukushima Dai-ichi Nuclear Power Station Accident (@Tokyo)

Nov. 21, 2017
The 7th Meeting of the Japan-France Nuclear Cooperation Committee (@Tokyo)

Nov. 27, 2017
The 5th Meeting of Japan-Ukraine Joint Committee for the cooperation to advance aftermath response to accidents at nuclear power stations (@Kiev)
Public Communication

Provision of basic and comprehensive information
- Call centers in Fukushima and in Tokyo

Environmental Regeneration Plaza (Information hub run by MOE and Fukushima Pref.)
- Providing interactive communications with people and municipalities
  - Interactive exhibition and workshops
  - Dispatch of experts to municipalities, communities, schools, etc.

Pamphlets, comic books, and videos
- Providing easy-to-understand information with detailed data on decontamination and radiation
  - Distributed at meetings, workshops, city offices, banks, and supermarkets in Fukushima, and also available on the Web

Collaboration with media
- Providing information that helps people understand remediation and the state of the region after remediation, in collaboration with media in Fukushima
  - Newspaper ads and TV/radio programs
  - ”Thanks Helmet”, a campaign to motivate the decontamination workers and improve relationships between the residents and the workers

Development of national public understanding
- Widely disseminate information to the public of remediation and the state of the region after remediation so that they can correctly understand the current status of Fukushima and its products

PR of rice harvested from decontaminated paddy fields
Exhibition at Tokyo about “Steps for Restoration of Fukushima”
Current PR Activities by MOEJ

Ministry of the Environment, Japan (MOEJ) released an English booklet in August. English web-site, “Environmental Remediation” was also renewed and two TV shows are now available on MOE’s web site.

English booklet

A comic style booklet, “Nasubi no Gimon” was released in August 2017, explaining radiation measures for food, etc.

Renewal of the MOE web-site

MOE renewed the web-site, adding more updated information http://josen.env.go.jp/en/

TV programs

“Fukushima Diaries” by Discovery Channel: In this 30-minitues show, three famous bloggers from overseas visited different destinations in Fukushima Pref. with their own interests. They showed the viewers what is really going on in Fukushima http://josen.env.go.jp/en/movie_publication/cooperation_index.html

Channel Japan/CNBC ASIA: CNBC broadcasted 15-minitues program 4times in a row. Each program showed you the key persons in Fukushima how hard they work to fight against misconceptions and to revitalize Fukushima. Each content is as follows;

#1 The story of Mr. McMichael, who tries to help widely communicate correct information on Fukushima to international communities

#2 The story of two young people who are eager to revitalize their hometown, Fukushima

#3 The story of small factories that tackle on the development of robots for decommission.

#4 The story of Dr. Hayano, who teaches what is radiation from academic point of views.