

Events and highlights on the progress related to recovery operations at Fukushima Daiichi Nuclear Power Station

May, 2015

Section 1: Executive summary

(1) The fact sheet uploaded in the link below is a summary of the current situation
<http://japan.kantei.go.jp/ongoingtopics/waterissues.html>

(2) Information update from the previous fact sheet

The following information was updated from the previous fact sheet: 1) important events that happened after February 2014 were added and 2) Progresses of “Preventive and Multi-Layered” measures are reflected.

(3) The previous report is available online at
https://www.iaea.org/sites/default/files/infcirc_japan0215.pdf

Section 2: Current conditions and forecast onsite

2.1: Relevant information pertaining to issues related to the recovery (including spent fuel and fuel debris management)

(1) New Information

(i) Newly added topics (in the past months since February)

Newly added topics in the past months since February are as follows. For additional details of these issues, please refer to the “related information” section.

- Situation of storing and treatment of accumulated water including highly concentrated radioactive materials at Fukushima Daiichi Nuclear Power Station(Tokyo Power Electric Company (TEPCO)) (April 24,2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1250134_6844.html
- Full power restored to drainage pumps, tests show no impact on seawater quality(TEPCO) (April 23,2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1249920_6844.html
- Shape-shifting robots obtain crucial data inside Fukushima reactor(TEPCO) (April 17,2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1249780_6844.html
- Analysis results regarding the water quality of the groundwater being pumped out for by-passing at Fukushima Daiichi Nuclear Power Station (Ministry of Economy, Trade and Industry (METI)) (March 31, 2015)
http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20150331_01b.pdf

- Japan Invited IAEA Experts for a Supplementary Consultation to the IAEA Review of Plans for the Decommissioning of Fukushima Daiichi Nuclear Power Station Units 1 to 4 (METI)(March 30, 2015)
http://www.meti.go.jp/english/press/2015/0330_01.html
- Summary of Decommissioning and Contaminated Water Management(TEPCO) (March 26, 2015)
http://www.tepco.co.jp/en/nu/fukushima-np/roadmap/images/d150326_01-e.pdf
- Reactor imaging technology for fuel debris detection by cosmic ray muon (TEPCO) (March 19, 2015)
http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150319_01-e.pdf
- More than 90 percent of water to be treated by end of May (TEPCO) (March 16, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1248751_6844.html
- Possible Flow of Contaminated Water to the Outside of the Controlled Area of Fukushima Daiichi NPS (Nuclear Regulation Authority(NRA)) (February25, 2015)
<http://www.nsr.go.jp/data/000098312.pdf>
- Information on a puddle of highly contaminated water detected at Fukushima Daiichi Nuclear Power Station and the impact of the water on the ocean (METI) (February24, 2015)
http://www.meti.go.jp/english/press/2015/0224_02.html
- TEPCO report results of continuous investigation into relatively high radioactivity in one of several drainage channels in Fukushima(TEPCO)(February24,2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1248334_6844.html
- Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of February 2015) (NRA)(February18,2015)
<http://www.nsr.go.jp/data/000098679.pdf>

(ii) Notable topics among recent updates

(a) Incidents related to the drainage channels

1) Temporal rise of radioactive data in the drainage B and C

On February 22, TEPCO noticed the alarm of the side gutter drainage radiation monitor at 10:00 am and detected the second alarm which indicated higher alert ten minutes after the first alarm. Following these alarms, TEPCO took necessary measures to prevent contaminated water discharging into the port by (i) confirming that all the water isolation valves at tank area were closed, (ii) suspending contaminated water transfer at a height of 35m above sea level, (iii) closing the drainage gates and (iv) pumping the water out from the drainage by using vacuum cars.

TEPCO also conducted an analysis of the radioactivity levels of contaminated water at near side gutter drainage radiation monitor and at the exit of drainage in the port and found that higher level of radioactivity compared to that of February 21 was confirmed. Based on these results, TEPCO assumed that there was inflow of contaminated water into the drainage and this contaminated water had flowed into the port at the Fukushima Daiichi NPS.

TEPCO also confirmed that (i) there was no leakage of contaminated water at tank areas, (ii) radioactivity levels of the drainage have been reduced to ordinary levels, and (iii) the radioactive data are within the normal range at monitoring points inside the port.(Following these results, TEPCO assumes that there is no additional inflow of contaminated water in the drainage.) For further information, please refer to the following webpage of TEPCO.

http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150222_03-e.pdf

2) Drainage K, Puddle of water which is relatively high contamination level and its impact on the sea

TEPCO announced on February 24 that a puddle of water which is relatively high contamination level was detected at the large carry-in entrance rooftop of the Unit 2 reactor building.

Ever since the accident at Fukushima Daiichi NPS, TEPCO has taken measures to decontaminate and clean drainages in order to satisfy the criteria for radiation levels which were set by the Nuclear Regulation Authority. However, following the fact that the radiation levels in the drainage K have not been lowered to the satisfactory level, TEPCO conducted survey at some places where the radiation level was high, especially where TEPCO assumed that contaminated water would possibly flow into the drainage K. As a result, aforementioned fact was newly observed.

In response to this event, TEPCO decided to take several measures in order to prevent radioactive materials from flowing out from the site, including the installation of Zeolite packed bags, which absorb radioactive materials, in the drainage.

Furthermore, the Government of Japan instructed TEPCO to take all appropriate measures including decontamination and cleaning of the drainages, and directed the company to conduct a comprehensive review covering all the possible risks at Fukushima Daiichi NPS at this moment. (For more information about the comprehensive risk review, please refer to (b) of (ii)Notable topics among recent updates.)

Regarding the radiation level of the sea water outside the port of the Fukushima Daiichi NPS, as it has been announced in the past, the level remains low enough compared to the density limit specified by the Reactor Regulation. For further information, please refer to the following webpage of TEPCO.

http://www.tepco.co.jp/en/press/corp-com/release/2015/1248334_6844.html

3) The suspension of the drainage water pumps and its recovery

On April 21, TEPCO announced patrolling workers found in the morning that all the 8 pumps installed to the drainage K had stopped and rainwater contaminated with radionuclide had been leaking into the sea, as the drainage K leads to the out of the port directly. The pumps had reportedly been operating normally as of the afternoon of 20 April. Attributing breakdown of the pumps' power generators as the cause of the stoppage, TEPCO replaced the generators and restarted the pumps in the evening on the same day.

The pumps had been installed in order to pump up the contaminated water out of the drainage K and transfer it to the other drainage channels leading to the inside of the port, as part of the countermeasures against increasing contaminated water in the drainage K, after the incident that a puddle of water which is relatively high contamination level, a part of which had been flowing into the drainage K through branch pipes, was found on the rooftop of the large carry-in entrance in the Unit 2 on February 24.

Because the precise time of the generator outage could not be confirmed, it is not possible to estimate exact amount of contaminated water that may have flowed into the sea. However, the water monitoring results showed no impact on the quality of the sea water outside the port.

(b) Comprehensive Risk Review by TEPCO

TEPCO had been conducting the “Comprehensive Risk Review of all the possible risks which might have an impact outside the site boundary of the Fukushima Daiichi Nuclear Power Station”, such as leakage of contaminated water, following the direction from Mr. Takagi, Senior Vice Minister of Economy, Trade and Industry, after a puddle of highly contaminated water on the rooftop of the building was found on February 24. On April 28, TEPCO put together the analysis result of Comprehensive Risk Review and reported it to the Ministry of Economy, Trade and Industry (METI).

TEPCO classified inspection target, which are expected to pose risks including leakage of contaminated water and scattering of radioactive materials into 190 items. Regarding 124 items of them, countermeasures by TEPCO have already been taken or are now underway, or its risks are relatively low.

Among the inspection targets, the sub-drain, a well to pump up groundwater near the Unit 2 reactor building, has been classified as “countermeasures need to be taken” earlier than the others. As highly contaminated water still remains in it, this water is in danger of spilling out of the well at the time of raining. TEPCO got started to take countermeasures against it in May.

In addition, while TEPCO classified 20 items including the puddle of contaminated water on the rooftop of the building as “additional measures need to be implemented at an early stage or subsequently”, it classified 45 items including contaminated water remaining in the trenches as “follow-up observation (after implementing countermeasures) in practice”.

Besides this, TEPCO announced that the company would review its policy on information provision and it would release promptly and thoroughly all radiation data to the public that may affect the surrounding environment, regardless of its level or whether it can be fully explained.

(c) Investigation into the primary containment vessel

1) Detection of fuel debris by cosmic muon rays

TEPCO announced that as a result of an investigation into the inside of the Unit 1 by using the muon, a kind of the cosmic rays, it confirmed that almost full amount of nuclear fuel in the Reactor Pressuring Vessel of the reactor has already melted and fallen down to the bottom of the containment. On the Unit 1, TEPCO had expected this fact from analyses of data previously, and it proved right by this muon detection.

It was the first time to observe the inside of the Reactor Pressuring Vessel, as workers cannot enter and investigate the building of the Unit 1, 2 and 3, where the melting of fuel occurred, because of extremely high radiation. TEPCO will use this detection’s result when it considers how to take out melted fuel debris out of the reactor, which is expected to be the most difficult step in the decommissioning process. “The result that no fuel is in the reactor enables us to consider specifically the way of removing debris. It is a big progress.” told the company.

The muon has characteristics that when it collides with any high-density material like uranium, it is absorbed or the muon diverts the direction, while it goes through

almost all of materials. This time's investigation used a measuring device developed by taking advantage of such characteristics.

From this February, TEPCO has measured the muon going through the building by using two devices placed by the reactor building and looked into the position and the distribution of the fuel, but it found no fuel in the reactor. Hereafter the company was going to investigate whether or not debris smaller than 1 meter was left in the reactor, by accumulating data. The devices used in this time's investigation could not observe the bottom of the reactor, where debris was expected to have piled up, so TEPCO was considering to use remote-controlled robots to investigate the part of the reactor. It also planned to launch an experiment with another method using the muon at the Unit 2 after April.

2) 1st survey of the primary containment vessel by a robot

On April 10, TEPCO had a robot enter the primary containment vessel (PCV) of the Unit1 reactor for investigation. The robot was developed by the International Research Institute for Nuclear Decommissioning (IRID) to investigate the inside of the Unit1 reactor, which had melted down due to the March 2011 accident, and it was the first time to be used.

Though the robot had been running and looking into the inside, it suddenly stopped at the point of two third of its way initially planned. Reportedly the robot stumbled over a difference in level on the floor.

While TEPCO gave up retrieving the robot, it still collected a lot of beneficial data, such as pictures and the radiation level inside the reactor. It enabled TEPCO to confirm no major damage in the reactor. The pictures also showed that any obstructions were not found around the entrance to the underground floor, where fuel debris that melted and fell down during the accident was believed to remain.

3) 2nd survey of the primary containment vessel by a robot

On April 15, TEPCO again had a robot enter the reactor. This time, the robot faced no trouble and managed to reach the goal point. The robot ran nearly 15 meter of the reactor's first floor where the first robot could not investigate, measuring the radiation level and the temperature and taking pictures and videos.

According to the images the robot's camera took, contaminated water stood under the first floor and its depth seemed to be nearly 2.8 meter. These results of the investigation indicated that melted fuel debris remains stable, staying in the water. TEPCO planned to screen the results it could gain through these investigations and utilize them in the next investigation of the bottom of the reactor, that was scheduled for the end of this fiscal year.

(d) Rainwater containing Strontium 90 found seeping into ground at the tank area

TEPCO announced on March 10 that approximately 750 tons of rainwater containing Strontium 90 might have seeped into the ground around the "H4" tank area. The company explained that the water was unlikely to leak out to the ocean through any of its drainage channels.

There was heavy rain in Fukushima and rainwater had accumulated around the "H4" tank area, where a simple outer dike was built to prevent the spread of any leakage from the inner dike, which was built for the purpose of protecting the tank area. The outer dike has a protective sealing which is designed to contain water, but it was found to be possible that some water might have seeped out from some seams. As the company analysed rainwater within the outer dike, gross beta levels, which was the

total amount of nuclides emitting beta rays such as Strontium 90 ranged from 150 to 8,300 Bq/L. Caesium levels were not detected.

It has been confirmed that there is no inflow into the closest drainage channel located to the sea side of "H4" area, nor any significant change in the monitored radioactivity level in the drainage.

After taking initial measures such as pumping out rainwater from the outer dike, the company said they would continue to take steps to retain rainwater such as further waterproofing the outer dike.

The "H4" area experienced tank leakage in the past. TEPCO said that it was investigating the cause of the rainwater contamination in this area, and would report its findings promptly.

(e) The map of "Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS(as of February 2015")

On February 18, the Nuclear Regulation Authority (NRA) identified Measures for Mid-term Risk Reduction at Fukushima Daiichi NPS. The purposes of the measures are (1) to present key priorities for safety identified by the NRA among the various measures undertaken by TEPCO for the decommissioning of Fukushima Daiichi NPS and (2) to clearly distinguish completed measures from ongoing and planned measures.

For example, on the issue of contaminated water, the NRA set avoiding leakage of contaminated water from tanks as the objective and aims to treat high-radioactive contaminated water in tanks by May 2015. For the detail of measures for Mid-term Risk Reduction at Fukushima Daiichi NPS, please refer to the following link:

<http://www.nsr.go.jp/data/000098679.pdf>

(f) The prospect for purification treatment of contaminated water

The effective dosage at the site boundary attributed to tanks was projected to achieve the target of less than 1 mSv/y by the end of this fiscal year. The treatment of 80% of the RO concentrated salt water was to be treated as of the end of this March.

The treatment of RO contaminated salt water, with the exception of 3 percent of the total amount(approximately 20, 000 tons) which included rich sea water ingredients generated at an early phase of the accident, was to be completed by the end of this May.

Purifying of this contaminated water with rich seawater ingredients will take another few months, because the mineral such as calcium and magnesium which is included in this water will hinder the rated flow operation of the contaminated water treatment system.

(g) The start of the frozen soil impermeable walls test operation

On April 30th, TEPCO started test operation of the frozen soil impermeable walls, which is a plan aiming to block the inflow of groundwater into the reactor buildings with walls built by freezing the soil around the buildings and to prevent the increasing of contaminated water. It was the first time to freeze the soil actually by this system. This time TEPCO injected freezing materials of 30 degrees below zero into the 58 pipes and buried 30 meters below the ground surface at 18 points. It also has been measuring the temperature around pipes and changes in groundwater level. According to the plan, the length of the walls will be as much as 1,500 meters, consisting of over 1,000 pipes.

At Fukushima Daiichi NPS, nearly 300 tons of groundwater has flown into the Unit 1 to 4 reactor buildings per day and turning into contaminated water including radioactive materials. When the frozen soil impermeable walls completed, the inflow of groundwater will be estimated to decrease to dozens of tons per day. Therefore, TEPCO places it as an important pillar of countermeasures against contaminated water. TEPCO will initiate the full-fledged operation after approval of the plan by NRA.

(h) Interim Storage Facility

(1) Necessity of the Interim Storage Facility (ISF)

Large amount of contaminated soils and waste have been retrieved during the decontamination work in Fukushima Prefecture. This contaminated soil has been sitting at temporary storage sites. Because it is currently difficult to specify the method of final disposal, it is necessary to establish ISF for safe and secured storage until final disposal facilities become available.

(2) Recent updates of this item

On October 3, 2014, the amendment of Japan Environmental Safety Corporation (JESCO) law on the final disposal of contaminated soil and waste outside Fukushima prefecture was approved by the Cabinet and was submitted to the Diet. It was enacted in November 2014.

On November 14, 2014, Ministry of the Environment (MOE) announced the Basic Transportation Plan and finalized the Transportation implementation plan on January 28, 2015. From December 2014 to January 2015, Okuma and Futaba towns made each decision to accept the construction of the ISF.

The construction of stock yards started on February 3, 2015.

On February 25, the Governor of Fukushima and both mayors of Okuma and Futaba conveyed the acceptance of the delivery soils, etc. to the ISF.

The delivery started from a temporary storage site in Okuma on March 13 and 25 in Futaba, etc.

(i) Effect on reduction of the groundwater inflow to the reactor building was brought about by “groundwater bypassing” at Fukushima Daiichi NPS

(1) Recent update

TEPCO announced this in September 2014 that the operation of “groundwater bypassing” showed effects and the amount of groundwater flowing into the reactor buildings was decreased by 80m³ at the maximum per day.

(2) Conduct of “groundwater bypassing”

“Groundwater bypassing” is one of the countermeasures to reduce the volume of groundwater flowing into the buildings at TEPCO’s Fukushima Daiichi NPS. This countermeasure is to pump out groundwater from wells at the mountainside area beside the reactor buildings and this groundwater will be released to the sea (bypassing) after passing the quality analysis survey. TEPCO and the Government of Japan have been explaining the content, function, and its effect of this countermeasure to the local stakeholders, such as Fukushima prefectural government and fishermen’s unions.

In April 2014, the fishermen’s unions showed their intention to accept the plan of conducting this groundwater bypassing. In addition, from April 9, TEPCO has been making effort to prepare for the actual release of the groundwater such as water

quality analysis of the groundwater being pumped up. On May 16, TEPCO and the Government of Japan published water quality analysis results conducted by three different analysis agencies. These results show that the radioactive levels of sampled water were substantially below the operational targets (each of the target is set by TEPCO and these operational targets are set at the very low level compared to the legal discharge limits). As for the detailed analysis results of these three agencies, please refer to the table shown in the following link:

http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/21140514_01a.pdf

Following the fact that TEPCO and the Government of Japan have reported and explained about these detailed analysis results to the local stakeholders, the Government of Japan decided to announce that the groundwater bypassing would be operated (i.e. groundwater being pumped out will be released to the sea) on May 21 2014.

Whenever TEPCO releases groundwater, government officials (*) will check the entire process of the release. In addition to this, TEPCO and the Government of Japan will publish detailed analysis results of the groundwater being pumped up on a regular basis in order to ensure transparency.

* Staff from the Intergovernmental Liaison Office for Decommissioning and Contaminated Water Management near Fukushima Daiichi Nuclear Power Station.

Following this operation, the radioactive analysis of the sea water was conducted by TEPCO (the sea water used for this analysis was sampled during and after the operation at the nearest sea water sampling post from the groundwater releasing point) and no significant change of radioactivity was observed in the analysis.

For further detail of the analysis result, please refer to the following TEPCO's website:

http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/gw_drainage_140523-e.pdf

(iii) Information update on the decommissioning process

Progress status report is published monthly by METI. This report summarizes the recent progress on the decommissioning made after the last report. The summary can be seen under the following URL:

- The Progress status report as of February 26, 2015 is available online

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20150226-e.pdf>

The report describes recent updates on the decommissioning process such as enhancement of mobile strontium-removal equipment and investigation on debris inside Unit 1 reactor. The following pictures show a part of the recent progress.



Pictures1: Installation status of measurement equipment

- The Progress status report as of March 26, 2015 is available online

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20150326-e.pdf>

The report describes recent updates on the decommissioning process such as rubble removal in Unit 3 spent fuel pool (SFP) and construction of the Fukushima revitalization meal service center. The following figure and pictures show some parts of the recent progress.



Figure 2: Status of fuel-handling machine in unit 3 SFP and pool gate

Pictures 3: Appearance of the Fukushima revitalization meal service center

(2) Related information

Information provided in the links below includes the description and the schedule of preventive and multi-layered measures for the contaminated issues in order to remove the source of contamination, isolate groundwater from contamination, and prevent further leakage of contaminated water. A summary and a full report are available at the following links.

(Summary)

http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/131210gaiyou_E.pdf

(Full report)

http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/131210report_E.pdf

As for other relevant issues, "METI's website for decommissioning" covers various issues in detail:

- METI's website for decommissioning

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/index.html>

Progress Status and Future Challenges of the Mid-and-Long-Term Roadmap toward the Decommissioning of TEPCO's Fukushima Daiichi NPS Units 1-4 (Outline) (METI) (Updated on September 25, 2014)

http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20140925_e.pdf

- For NRA's recent news releases, please see the following link.

<http://www.nsr.go.jp/english/newsrelease/>

- For TEPCO's activities, please see TEPCO's website.

TEPCO's website for current situation of Fukushima Daiichi and Daini NPSs

<http://www.tepco.co.jp/en/nu/fukushima-np/index-e.html>

2.2 Recent incidents and progress (in the past months since February)

Related information:

- TEPCO Investigating cause of brief water incident at Fukushima Daiichi NPS (TEPCO) (February 24, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1248327_6844.html
- TEPCO reports results of continuous investigation into relatively high radioactivity in one of several drainage channels in Fukushima Daiichi NPS (TEPCO) (February 24, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1248334_6844.html
- Decrease of water level around H4 tank area (TEPCO) (March 12, 2015)
http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150312_01-e.pdf
- Fire on the bank of the road on the west side of Units 5 and 6 in the premises of Fukushima Daiichi NPS(TEPCO) (April 1, 2015)
http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150401_01-e.pdf

Section 3: Monitoring results

3.1: Onsite monitoring results reported by TEPCO

-3.1.1 Radionuclide releases to the atmosphere

(1) Outline of the item

On-going monitoring of the air at the site of the Fukushima Daiichi NPS has detected no significant increase in radiation levels.

(2) Noteworthy change in data during the period from February to April 2015

Except for the slight changes in the density of caesium-134, caesium-137 which were nearly negligible, the monitoring result is ND (ND indicates that the measurement result is below the detection limit). In this regard, no announcement has been made by TEPCO for this item.

*No changes in the density of caesium-134 were reported.

* Slight changes in the density of caesium-137 were reported in February on 9, in March on 3, 4, 6, 12, 27 and 29, and in April on 11, 12, 14, 15 and 16.

(3) Monitoring result data

The monitoring results in the air at the site of the NPS are available in the following webpage (Please see the calendar titled “in the air at the site of Power Station”). This monitoring result is updated every day on this site.

<http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/index-e.html>

- 3.1.2 Radionuclide releases to the sea (including groundwater monitoring results)

(1) General outline of the item

Results of radioactive nuclide analysis are published for the samples of groundwater at the east side of the Unit 1-4 turbine buildings and seawater at the port in order to monitor the source and the extent of the radioactive materials in the groundwater, and to determine whether the materials included in groundwater affect the sea.

Increased radioactivity has been observed within the port, in an area smaller than 0.3 km². However, ongoing monitoring in the surrounding ocean area has detected no significant increase in radiation levels outside the port or in the open sea, and has shown that radiation levels in these areas remain within the standards of the World Health Organizations guidelines for drinking water.

(2) TEPCO's report on radionuclide releases to the sea

TEPCO issued a report which includes progress and status of the ground improvement by sodium silicate. This report is available online: http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150109_02-e.pdf

In addition, the historical data of radioactive concentration in the groundwater sampled at the Unit 1-4 bank protection are available online with the csv format. The data from north of Unit 1, between intakes of Units 1 and 2, between intakes of Units 2 and 3, and between intakes of Units 3 and 4 are available at the following sites respectively.

<http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/2tb-east-newest02-e.csv>

<http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/2tb-east-newest03-e.csv>

<http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/2tb-east-newest04-e.csv>

<http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/2tb-east-newest05-e.csv>

(3) Related information

Analyses regarding radionuclide releases are conducted in different parts of the sea (outside of the port, inside of the port, and inside of the Unit 1-4 water intake channel). Results of these analyses and analysis results of groundwater are as follows (the information is automatically updated daily).

- Analysis Results of Groundwater (Unit 1-4 Bank Protection)
http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/tb-east_map-e.pdf
- Analysis Results of Seawater (Outside of the Port)
http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/seawater_map-e.pdf

- Analysis Results of Seawater (Inside of the Port)
http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/intake_canal_map-e.pdf
- Analysis Results of Seawater (Inside of Unit 1-4 Water Intake Channel)
http://www.tepco.co.jp/en/nu/fukushima-np/f1/smp/2014/images/2tb-east_map-e.pdf

3.2: Offsite monitoring results

1. Monitoring results of air dose rates in the 20 Km radius zone around Fukushima Daiichi NPS

(1) Outline of the item

The monitoring of air dose rates in the 20 Km radius zone around Fukushima Daiichi NPS has been conducted at 50 points in the zone (the types of detectors used for monitoring are NaI scintillation detectors and/or ionization chamber type survey meters). The air dose rates in the 20 Km radius zone have continuously been decreasing since May 2011 (after the accident at Fukushima Daiichi NPS on March 11, 2011).

(2) Noteworthy updates in the past months

As described in (1) above, the air dose rates in the 20 Km radius zone around the NPS have been in a downward trend, and the monitored air dose rates were stable from February 2015 to April 2015. Based on these results, any further announcement was not made on this item (e.g., significant increase of air dose rates in the 20 Km radius zone) during this period.

(3) Monitoring results

Each of the following URL leads to the monitoring results of air dose rates in the 20 Km radius zone around Fukushima Daiichi NPS from February 2015 to April 2015:

- February:<http://radioactivity.nsr.go.jp/en/list/239/list-201502.html>
- March:<http://radioactivity.nsr.go.jp/en/list/239/list-201503.html>
- April:<http://radioactivity.nsr.go.jp/en/list/239/list-201504.html>

The following URL leads to an archive of monitoring results:

<http://radioactivity.nsr.go.jp/en/list/239/list-1.html>

2. Monitoring results of dust in air and soil in the 20 Km radius zone around Fukushima Daiichi NPS

(1) Dust

The monitoring results of dust obtained from February 2015 to April 2015 show that the concentrations of dust were either ND (ND indicates that the measurement result is below the detection limit) or very low. Based on the results, any further announcement was not made on this item (e.g., significant increase of the concentrations of dust) during this period.

The following URL leads to the monitoring results (dated 14 April, 2015) of dust:

http://radioactivity.nsr.go.jp/en/contents/10000/9665/24/223_20150414.pdf

(2) Soil

Radiation monitoring of soil is conducted as appropriate. The latest monitoring of soil was conducted in January 2015. The following URL leads to the monitoring results (dated April 16, 2015) of soil:

http://radioactivity.nsr.go.jp/en/contents/10000/9673/24/495_20150416.pdf

(3) Previous monitoring results

The following URL provides the previous monitoring results (from April 2011 to the present) of dust in air:

<http://radioactivity.nsr.go.jp/en/list/240/list-1.html>

3. Estimated values and measured values of environmental radioactivity at 1m height from the ground surface in other prefectures (46 prefectures in total) other than Fukushima Prefecture

(1) Outline

The air dose rates measured using the monitoring stations installed in other prefectures have mostly returned to the equal level of the air dose rates before the accident.

(2) Updates from February 2015 to April 2015

The estimated and measured values were relatively stable from February 2015 to April 2015. Based on the results, any further announcement was not made on this item (e.g., significant increase of the estimated and measured values) during this period.

(3) Monitoring results

The following URL leads to the estimated and measured values, and new monitoring results are uploaded nearly every day:

<http://radioactivity.nsr.go.jp/en/list/192/list-1.html>

3.3: Sea area monitoring results of seawater, sediment and biota

(1) Outline

Sea area monitoring results in the area around Fukushima Daiichi NPS have indicates that the radiation levels outside the port or in the open sea have been relatively stable.

(2) Updates during the period from February 2015 to April 2015

The sea area monitoring results from February 2015 to April 2015 were relatively stable as described in (1) above. Based on the results, any further announcement was not made on this item (e.g., significant increase of sea area monitoring results) during this period.

(3) Related information

Sea area monitoring is classified to be conducted in 5 areas (Area 1: Sea area close to TEPCO's Fukushima Daiichi NPS, Area 2: Coastal area, Area 3: Off-shore area, Area 4: Outer sea area, and Area 5: Tokyo bay area), and this information is available under the "Monitoring of Sea Water" section of the NRA webpage entitled "Readings of Sea Area Monitoring". This webpage also includes monitoring results of sediment under the "Monitoring of Marine Soil" section, and it is also classified into 4 areas (Area 1: Sea area close to TEPCO's Fukushima Daiichi NPS, Area 2: Coastal area, Area 3: Off-shore area, Area 4: Tokyo bay area). The NRA has been providing a weekly report on sea area monitoring results. The "Readings of Sea Area Monitoring" webpage covers various issues and the webpage's information is periodically updated several times a week. The following URLs lead to this webpage and the weekly report on sea area monitoring results:

- Readings of Sea Area Monitoring
<http://radioactivity.nsr.go.jp/en/list/205/list-1.html>
- Sea Area Monitoring (Weekly Report)
<http://radioactivity.nsr.go.jp/en/list/295/list-1.html>
- F1 issues (NRA is providing monitoring results weekly to the IAEA which are openly shared with the public)
<http://www.nsr.go.jp/english/f1issues/index.html>
<http://www.iaea.org/newscenter/news/2013/japan-basic-policy-full.html>

Section 4: Off-site Decontamination

4.1: Outline

Off-site decontamination is in operation since the accident of Fukushima Daiichi NPS. Currently, target areas of decontamination are categorized as below.

4.1.1 Special Decontamination Area (SDA)

National Government is responsible for development of plans and implementation of measures for decontamination of SDA. SDA consists of the previous "restricted areas" located within a 20 km radius from the TEPCO Fukushima Daiichi NPS and the previous "deliberate evacuation areas" which are beyond 20km radius from the NPS and where the additional annual effective dose for individuals was anticipated to exceed 20 mSv in the first year after the accident.

4.1.2 Intensive Contamination Survey Area (ICSA)

ICSA is the area where the air dose rate is over 0.23 uSv/h (equivalent to over 1 mSv/y of additional dose under a certain condition). 104 municipalities in 8 prefectures are designated as this Area at first. Decontamination for the area is implemented by each municipality with financial and technical supports by the national government.

4.2: Current status

4.2.1 SDA

- Development of decontamination plans for all 11 municipalities is completed.
- Decontamination work for 4 municipalities (Tamura-city, Kawauchi-village, Naraha-town, Okuma-town) has been completed in accordance with the decontamination plans and decontamination of residential areas have been completed in further 2 municipalities (Katsurao-village and Kawamata-town) and almost completed in Iitate-village at the end of 2014.

4.2.2 ICSA within Fukushima Pref. (Outside of Fukushima Pref.)

- Approximately 90% (100% in other prefectures) of planned decontamination projects for public facilities have been completed.
- Approximately 60% (90% in other prefectures) of planned decontamination projects for residential houses have been completed.

4.3: Related information

The MOE has also been conducting the technology demonstration projects for decontamination, aiming to promote the development of such technologies for effective and efficient decontamination and for the volume reduction of removed soils and wastes. The results of demonstration are to be published with the evaluation from the viewpoints of effectiveness, economic efficiency and so on.

The following URL leads to the web page of MOE's, which post information related to Decontamination:

- Measures for Decontamination of Radioactive Materials Discharged by the accident at the TEPCO's Fukushima Daiichi NPS.

<http://iosen.env.go.jp/en/>

Section 5: Food products

5.1: Summary of testing

Food samples are routinely monitored to ensure that they are safe for all members of the public.

During the month of February 2015, 23,934 samples were taken and analysed. Among these samples, 47 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.20 percent of all samples.

During the month of March 2015, 27,497 samples were taken and analysed. Among these samples, 62 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.23 percent of all samples.

During the month of April 2015, 24,259 samples were taken and analysed. Among these samples, 22 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.09 percent of all samples.

Restrictions are imposed on the distribution of food products, if the level of radioactive contaminants of the food product exceeds the limit (caesium-134+caesium-137: 100 Becquerel/kg). Restrictions are to be removed, when the level of radioactive contaminants of the food product is monitored to be constantly below the limit for a certain period of time. Therefore, the products on which the distribution restrictions are newly imposed are the products whose radioactive contaminant level exceeded the limit in the past month. By the same logic, the products whose restrictions are newly removed are the products whose radioactive contaminant level has been lower than the limit for a certain period of time.

5.2: Results of monitoring food products

(1) The current situation and protective measures

The fact sheet uploaded in the link below is the summary of the current situation and the measures taken by the Government of Japan:

http://www.mhlw.go.jp/english/topics/2011eq/dl/food-130926_1.pdf

(2) Noteworthy updates in the past months (during the period from February 2015 to April 2015)

The lists of food products whose status regarding the restriction was changed are as follows.

(i) Products whose distribution was newly restricted in February 2015

- Wild Japanese butterbur scape produced in Minamisoma-shi, Fukushima prefecture

(ii) Products whose restrictions were removed in February 2015

- Olive flounder captured in Ibaraki offshore
- Log-grown shiitakes (outdoor cultivation) produced in Sendai-shi and Taiwa-cho, Miyagi prefecture that are managed based on shipment and inspection policy set by Miyagi prefecture
- Head type leafy vegetables, non-head type leafy vegetables, flowerhead brassicas and Turnips produced in Naraha-machi and Kawauchi-mura (limiting area within 20 km radius from the TEPCO's Fukushima Daiichi NPS), Fukushima prefecture
- Star-spotted smooth-hound captured in Fukushima offshore
- Log-grown shiitakes (outdoor cultivation) produced in Nikko-shi, Otawara-shi, Motegi-machi, and Nakagawa-machi, and Log-grown shiitakes (indoor cultivation) produced in Otawara-shi that are managed based on shipment and inspection policy set by Tochigi prefecture
- Pacific cod captured in part of Fukushima offshore
- Shotted halibut captured in Fukushima offshore

(iii) Products whose distribution was newly restricted in March 2015

- Rice produced in parts of Fukushima prefecture in 2015 (excluding rice controlled under the concept of management of Fukushima prefecture)
- (iv) Products whose restrictions were removed in March 2015
 - Japanese dace captured in Kitakami river in Iwate prefecture (limiting lower reaches from Shijushida dam and including its branches but excluding upper reaches from Ishibane dam, Ishibuchi dam, Irihata dam, Goshō dam, Sotoyama dam, Tase dam, Tsunatori dam, Toyosawa dam and Hayachine dam)
 - Silver crucian carp (excluding farmed fish) captured in Kasumigaura lake, Kitaura lake, Sotonasakaura lake and the rivers flowing into these lakes, and Hitachitone river, Ibaraki prefecture
- (v) Products whose distribution was newly restricted in April 2015
 - Wild ostrich ferns produced in Minamisoma-shi, Fukushima prefecture
- (vi) Products whose restrictions were removed in April 2015
 - Nibe croaker and Ridged-eye flounder captured of Fukushima offshore
 - Log-grown shiitakes (outdoor cultivation) produced in Ofunato-shi, Tono-shi, Ichinoseki-shi, Rikuzentakata-shi, Sumita-cho and Otsuchi-cho, Iwate prefecture that are managed based on shipment and inspection policy set by Iwate prefecture
 - Log-grown shiitakes (outdoor cultivation) produced in Osaki-shi, Miyagi prefecture that are managed based on shipment and inspection policy set by Miyagi prefecture
 - Bamboo shoots produced in Moriya-shi and Tsukubamirai-shi, Ibaraki prefecture
 - Bamboo shoot produced in Shiroishi-shi and Marumori-machi (limiting to former Marumori-machi and former Kosai-mura), Miyagi prefecture
 - Bamboo shoots produced in Moriya-shi and Tsukubamirai-shi, Ibaraki prefecture

(3) Monitoring results data

See the link below (new monitoring results are added nearly every day):

http://www.mhlw.go.jp/english/topics/2011eq/index_food_radioactive.html

(4) Information focused on the safety of the fishery products

The information that is provided above in (1)-(3) cover fishery products, but in addition to this information, further detailed information is available on the Fisheries Agency's website

<http://www.jfa.maff.go.jp/e/inspection/index.html>

- (i) Summary of monitoring on fishery products

The first half of the website consists of summary of monitoring on fishery products. For further information and to see the actions taken to ensure the safety of fishery products, please refer to the fact sheet uploaded in the site. This fact sheet is available in English, French, Spanish, Russian, Chinese and Korean.

- (ii) “Report on the Monitoring of Radionuclides in Fishery Products” was updated by the Fisheries Agency of Japan

Since the accident at the TEPCO’s Fukushima Daiichi NPP, the Government of Japan and local authorities have cooperated closely with relevant bodies to secure the safety of fishery products. With an aim to promote accurate understanding on the safety of Japanese fisheries products at home and abroad, the data and information accumulated in the inspection of the last three years was evaluated comprehensively in the previous Report, which was published in May 2014.

In April 2015, the Fisheries Agency of Japan released updated Report, which reflects the latest data and recent research results. It shows that, after four years from the accident, the level of radioactive Cs in fishery products has declined substantially.

The Report in Japanese is available at the following URL:
(Full Report)

http://www.ifa.maff.go.jp/i/housyanou/pdf/report_zenbun.pdf

(Summary)

http://www.ifa.maff.go.jp/i/housyanou/pdf/report_gaiyou.pdf

English translation will become available in May 2015.

- (iii) Monitoring results data

The second half of the website consists of various monitoring results on radioactivity measured in fishery products.

Section 6: Radiation Protection of Workers

Information pertaining to radiation protection of workers involving TEPCO's Fukushima Daiichi NPP Accident is updated on the following website of the Ministry of Health, Labour and Welfare (MHLW):

<http://www.mhlw.go.jp/english/topics/2011eq/workers/index.html>

6.1: TEPCO’s Fukushima Daiichi NPP

The status on the exposure dose, health care management and radiation protection of the workers at TEPCO’s Fukushima Daiichi NPP are as follows.

- (1) Status of Radiation Exposure

Exposure doses of the workers at TEPCO’s Fukushima Daiichi NPP are reported to the MHLW once a month. The latest monthly report is available on the following webpage:

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valid. <http://www.mhlw.go.jp/english/topics/2011eq/workers/irpw/index.html>

- (2) Radiation Protection

Information on radiation protection of workers including measures to be taken and evaluation of committed effective dose of workers at the affected plant:

<http://www.mhlw.go.jp/english/topics/2011eq/workers/tepc/index.html#rp>

- (3) Long-term Health Care

Updated Information on long-term health care of emergency workers including health examination and guidelines;

“Policies for Epidemiological Studies Targeting Emergency Workers at the TEPCO’s Fukushima Daiichi Nuclear Power Plant Have Been Compiled.” is available on the following webpage. (Updated on June 4, 2014)

http://www.mhlw.go.jp/english/topics/2011eq/workers/tepc0/lhc/pr_140604.html

(4) Other Related Topics

Updated other related information on the workers at TEPCO’s Fukushima Daiichi NPP:

[Senior Vice-Minister of Health, Labour and Welfare Demands Thorough Implementation of Occupational Accident Prevention Measures](#) (Updated on January 23, 2015)

http://www.mhlw.go.jp/english/topics/2011eq/workers/ri/pr/pr_150123.html

6.2: Decontamination/Remediation

The status on radiation protection of the workers engaged in decontamination and remediation of contaminated materials derived from Fukushima Daiichi NPP Accident is as follows.

(1) Decontamination/Remediation

Updated Information on decontamination and remediation including guidelines and results of labour inspection:

“Results of Supervision/Instructions to Employers of Decontamination Works (January - June 2014)” is available on the following webpage. (Updated on August 7, 2014)

http://www.mhlw.go.jp/english/topics/2011eq/workers/dr/dr/pr_140807.html

(2) Waste Disposal

Information on waste disposal work including guidelines:

<http://www.mhlw.go.jp/english/topics/2011eq/workers/dr/index.html#wd>

(3) Other Related Topics

Other related information on waste disposal work:

<http://www.mhlw.go.jp/english/topics/2011eq/workers/dr/index.html#ort>

6.3: Related Information

(1) Press Releases

Press releases from the MHLW on radiation protection of workers are updated on the following webpage.

[Senior Vice-Minister of Health, Labour and Welfare Demands Thorough Implementation of Occupational Accident Prevention Measures](#) (Updated on January 23, 2015)

http://www.mhlw.go.jp/english/topics/2011eq/workers/ri/pr/pr_150123.html

(2) Guidelines/Notifications

Guidelines and notifications from the MHLW on radiation protection of workers are available on the following webpage.

<http://www.mhlw.go.jp/english/topics/2011eq/workers/ri/index.html#gn>

(3) Regulations/Legislations

Regulations and legislations of the MHLW on radiation protection of workers are available on the following webpage.

<http://www.mhlw.go.jp/english/topics/2011eq/workers/ri/index.html#rl>

(4) Governmental reports

Governmental reports issued by the MHLW are available on the following webpage.

[Response and Action Taken by the Ministry of Health, Labour and Welfare of Japan on Radiation Protection at Works Relating to TEPCO's Fukushima aiichi Nuclear Power Plant Accident.](#) (Updated on March 31, 2015)

http://www.mhlw.go.jp/english/topics/2011eq/workers/ri/gr/pr_150331_a01.pdf

(5) Leaflets/Brochures

Leaflets and brochures published by the MHLW on radiation protection of workers are available on the following webpage.

<http://www.mhlw.go.jp/english/topics/2011eq/workers/ri/index.html#lb>

(6) Other Institutions

[Statistics on Radiation Exposure Doses of Decontamination Workers and Other Items Have Been Announced.](#) (Updated on April 15, 2015)

http://www.mhlw.go.jp/english/topics/2011eq/workers/ors/oi/pr_150415.html

[The launch of the organization for systematic control of radiation exposure doses, etc. for decontamination and related works.](#) (Updated on November 15, 2013)

http://www.mhlw.go.jp/english/topics/2011eq/workers/ors/oi/pr_131115.html

Section 7: Actions taken by the Japanese Government

7.1: Currently implemented public protective actions in place (i.e., food restrictions)

1. Actions have been taken regarding food safety during the period from October 2014 to January 2015

Actions to restrict food distribution or removal of these restrictions are taken based on monitoring results. For the products whose distribution was newly restricted or whose restrictions were removed during this period, please refer to 5.2(2)

2. Further information on this topic is available online:

http://www.mhlw.go.jp/english/topics/2011eq/index_food_press.html

3. Supplementary note (explanation for fishery products)

The scope of the protective actions covers not only agricultural products but also fishery products. For further information about the monitoring result of the fishery products, please refer to Section 4.2(4).

7.2: Measures implemented to improve public communication

1. Information from the last months

The Government of Japan has actively been strengthening its communication process to ensure timely dissemination of accurate information on the current status of activities onsite in multiple languages for the international community. In 2015 Japan provided updates in February on 3, 10, 17, in March on 4, 10, 17, in April on 8, 15, 22 and 28, and so far in May on 5, 12. All of the updates provided to the IAEA are available on this webpage:

<https://www.iaea.org/newscenter/focus/fukushima/status-update>

2. Relevant activities in disseminating information to the public

(1) Press Conference

Recovery operations at the Fukushima Daiichi NPS including contaminated water issues are one of the major issues which the Government of Japan has been focusing on. Since progress has been made frequently, there are updates arising on a daily basis. To explain the updates to the public, the Government of Japan disseminates the relevant information through press conferences. The Chief Cabinet Secretary and the Minister of Economy, Trade and Industry are the main briefers of the press conference, but other ministers or press secretaries may also be the briefer, depending on the subject.

(2) Information delivery to media

The government has been providing relevant information for both the domestic and the foreign press including that stationed in Tokyo and for other media, using various means such as press conferences, press briefings, press tours and press releases. For example, the Fisheries Agency has conducted a media tour to a radioactivity monitoring site for fishery products (Marine Ecology Research Institute) in order to facilitate better understanding for monitoring on fishery products.

(3) Providing information to foreign nations through diplomatic channels

Whenever there is a significant update, the Ministry of Foreign Affairs sends out a notification with relevant information to all foreign missions stationed in Tokyo. The same information is conveyed to all Japanese embassies, consulate generals, and missions. As necessary, the information would be shared with foreign nations and relevant organizations through these diplomatic channels.

In addition, the Ministry of Foreign Affairs holds briefing sessions on Fukushima Daiichi NPS issues for the foreign missions stationed in Tokyo, when there is a significant update. The information on the last briefing session is shown in the link below.

http://www.mofa.go.jp/dns/inec/page22e_000505.html

(4) Measures taken by TEPCO

TEPCO has thus far been providing briefings on the status of Fukushima Daiichi NPS. In June and October 2014, in order to supplement such briefings, it has

arranged for field observation tours of Fukushima Daiichi NPS for diplomatic officials and employees of embassies to Japan.

These briefings have been conducted with the aim of facilitating a correct understanding through the expeditious communication of accurate information outside of Japan, as well as maintaining TEPCO's accountability as the main party responsible for the accident.

The purpose of the field tours is to enable participants to observe the actual circumstances as they are at the power station by viewing and touring the actual site, in conjunction with the briefings at diplomatic missions. Moreover, TEPCO expects to utilize the network of diplomatic officials to build a new relationship, and provide a connection with TEPCO which had not been open before conducting these tours.

(5) Disseminating information to Japanese populations

In general, the information is shared with Japanese populations through the channels shown above in (1)-(2). In addition to these efforts, the Government of Japan has improved public communication by enriching the content of relevant ministries' webpage and by hosting a local briefing session on a case by case basis. METI regularly informs the progress of the decommissioning activities and contaminated water countermeasures to Fukushima prefecture and 13 local municipalities surrounding the site through video conference and direct visits.

3. Risk Communication

(1) Policy package regarding radioactive risk communication aiming for evacuees returning their home

In February 2014, the Government of Japan adopted a policy package regarding radioactive risk communication aiming for evacuees returning to their homes. The importance of addressing in detail each person's concern and apprehension is expected to increase, and the Government of Japan decided to adopt a comprehensive package regarding risk communication based on such recognition.

This package includes following measures:

- (i) Reinforce the ongoing risk communication approaches to further address the individual's concern and apprehension

Up until now, the Government of Japan provided relevant information to the public regarding the impact of radiation on one's health through various measures such as hosting a lecture session or seminar by inviting radiation experts to the evacuation site or supplying a range of publication magazines to affected people.

In addition to these measures, it is necessary to provide open communication for people to freely ask any questions. The Government will address this issue by recognizing that the people's perception on the impact of radiation on one's health varies from person to person.

The Government of Japan will reinforce its risk communication approaches by taking finely textured measures to alleviate individual's concern in evacuation order municipalities.

- (a) Providing information in an accurate and straightforward manner
- (b) Reinforcing risk communication approaches to small groups of people (man to man or in an intimate setting)
- (c) Capacity building of experts in local areas

(d) Enriching risk communication services being delivered by therapists who closely support the local regions

(ii) Continuous delivery of risk communication service to other areas in Fukushima and expanding to the national audience

Regarding the following measures for risk communication which intend to cover Fukushima prefecture as well as rest of other prefectures in Japan, the Government will feedback the on-site challenges, improve the content and delivery of the measures to more effective ones and would make continuous effort.

(a) Meetings to explain radioactive substances in food will be held, and experts who can communicate precise information corresponding to specific regions will be trained so that workshops, etc. will be held all over Japan. In addition, information dissemination about radioactive substances in food will be promoted through utilization of the Internet, provision of public information to consumers and so on.

(b) A telephone counseling service will be furnished to respond to inquiries from people with health anxiety due to radiation.

(c) Lectures, trainings, etc. about health effects of radiation will be provided.

(d) Teaching materials for schools about radiation will be prepared and distributed, and workshops, etc. for teachers will be held.

(e) Individual doses will be monitored with personal dosimeters, etc., and risk communication based on such monitoring results will be conducted to disseminate correct knowledge about radiation.

(2) Practical measures for evacuees to return their homes by NRA

NRA formulated practical measures of radiation protection for the evacuees, who will return their homes, from scientific and technological points of view in cooperation with other governmental organizations. The practical measures stay on addressing the difficulties which the evacuees have been facing. It is expected that the practical measures will be helpful for the evacuees to make decisions whether they return their homes or not.

The detail of these measures taken by NRA is available in the following link:

<https://www.nsr.go.jp/data/000067234.pdf>

1. Related organizations dealing with decommissioning and contaminated water measures

(1) Fukushima Daiichi Decontamination & Decommissioning Engineering Company

(i) For the purpose of clarifying the responsibilities allocation and focusing solely on handling of decommissioning and contaminated water at the Fukushima Daiichi NPS, TEPCO established a new company on April 2014, which is an internal entity of the function dealing with decommissioning and contaminated water within TEPCO. For further information, please refer to the following webpage:

http://www.tepco.co.jp/en/press/corp-com/release/2014/1235009_5892.html

(ii) The organizational structure of the company

i. General Administration Dept.

Overall management of the whole company, establishment of support and operational infrastructure, and supporting of the Chief Decommissioning Officer on site.

- ii. Project Planning Dept.
Schemes of resolution policies and plans for issues related to decommissioning and contaminated water.
- iii. Fukushima Daiichi NPS
Implementation of countermeasures against decommissioning and contaminated water.

(2) Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF)

- (i) “Nuclear Damage Compensation Facilitation Fund”, which was established in 2011 in order to support the compensation for nuclear damage occurred during the accident at the TEPCO’s Fukushima Daiichi Nuclear Power Plant, was reorganized and became “Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF).” The reorganized NDF is also in charge of some of the decommissioning issues and is expected to challenge the tasks with expertise and continuity which have not been sufficiently dealt with so far from Mid-and-long term landscape. For further information, please refer to the following webpage:

Error! Hyperlink reference not valid. http://www.ndf.go.jp/soshiki/pamph_e.pdf

- (ii) The roles of the new NDF will be as follows:
 - i. Strategy planning of important issues including fuel debris retrieval and waste
 - ii. Planning and schedule control of R&Ds needs
 - iii. Support of schedule control of key items
 - iv. Enhancement of international cooperation

(3) “The Collaborative Laboratories for Advanced Decommissioning Science”

- (i) Japan Atomic Energy Agency (JAEA) established the Collaborative Laboratories for Advanced Decommissioning Science bringing together expertise and knowledge from academia, industry and government in April, 2015. The laboratories are not only to provide TEPCO with technologies gathered during academia-industry-government cooperation and apply research results to the decommissioning and reconstruction of Fukushima, but also to provide a research database as an international public asset.
- (ii) The functions of the laboratories will be as follows:
 - i. Functioning as the center for international research with academia-industry-government
 - ii. Creating international collaborative research promotion system
 - iii. Contributing to human resources development
 - iv. Sharing research results with the international community

2. Related websites

Information is frequently shared in English on the following websites:

- The Ministry of Foreign Affairs:
http://www.mofa.go.jp/policy/page3e_000072.html
- The Nuclear Regulation Authority:
<http://www.nsr.go.jp/english/>
- The Ministry of Economy, Trade and Industry:
<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/index.html>
- The Food Safety Commission of Japan:

- http://www.fsc.go.jp/english/emerg/radiological_index_e1.html
- The Ministry of Health Labour and Welfare:
http://www.mhlw.go.jp/english/topics/2011eq/index_food_policies.html
- The Ministry of Agriculture, Forestry and Fisheries:
http://www.maff.go.jp/e/quake/press_110312-1.html
- TEPCO (Information on water leakage):
<http://www.tepco.co.jp/en/nu/fukushima-np/water/index-e.html>
- TEPCO (General information on activities onsite):
<http://www.tepco.co.jp/en/nu/fukushima-np/index-e.html>

IAEA assessment on aspects presented in the May 2015 report ‘Events and highlights on the progress related to recovery operations at Fukushima Daiichi NPS’

Third International Decommissioning Peer Review Mission Final Report

The final report of the 3rd International Decommissioning Peer Review Mission to Japan (which took place from 9-17 February 2015 and included a follow-up expert visit on 17-21 April 2015) was [published on 14 May 2015](#). The scope of this Mission and the follow-up expert visit covered the majority of issues pertaining to current and forecast conditions, radiation worker protection, and actions taken by the Japanese government summarized in Sections 2, 6 and 7 of the recent publication ‘Events and highlights on the progress related to recovery operations at Fukushima Daiichi NPS’ provided by Japan.

Completion of Treatment of the Stored Contaminated Water

As mentioned in the report of the 3rd International Decommissioning Peer Review Mission to Japan, more than half of the approximately 600,000 m³ of contaminated water stored onsite had been treated by February 2015. According to the latest update received from TEPCO (on 27 May), most of the stored contaminated water has now been treated including 20,000 m³ of high salt bearing contaminated water generated soon after the accident when seawater was used for cooling of the reactor cores. A small quantity of contaminated water which cannot be pumped out still remains in the bottom of the tanks and TEPCO plans to remove and treat this residual water at the time of dismantling of the tanks.

At the time of writing this report, nearly all of the stored water, already treated for the removal of cesium, has now been treated for the removal of Sr-90, the radionuclide of primary concern. Approximately 70% of the stored water has also been treated for the removal of the other radionuclides as well, while the remaining 30% would still require additional treatment using the Advanced Liquid Processing Systems (ALPSs) to remove the other radionuclides. However, since Sr-90 was the radionuclide of primary concern, the radiological risk of storing large volumes of contaminated water has been reduced significantly with its removal.

It should be noted that the water thus treated would still contain tritium and storage of treated contaminated water containing tritium in above ground tanks is a temporary measure while TEPCO develops a more sustainable solution.

The IAEA is aware of the recent news carried by the media on discovered water leaking from a hose to the harbor and hydrogen gases in some containers (High Integrity Containers). Regarding the incident in which contaminated water leakage was found near a drainage connected to the port, the NRA reported recently to the IAEA that the incident had no impact on the outside of the port. As for the High Integrity Containers (HIC), during the IAEA expert visit in April this year, the experts discussed a related issue of leakage of water from the containers and encouraged TEPCO to continue investigations to gain a full understanding of the extent and nature of this problem and to define a sustainable solution for preventing leakages from the containers. The IAEA will seek additional information from counterparts in Japan to continue assessment of these developments.

Sea area monitoring results

Sea area monitoring data continues to be published regularly by Japan's Nuclear Regulatory Authority (NRA). The data shows that radionuclide levels in seawater in all the monitored sea areas are below national regulatory limits. Moreover, the concentrations of tritium, Sr-90, Cs-134 and Cs-137 in seawater have been relatively stable, with no significant changes observed during the last three months (February 2015 to April 2015). The levels of Sr-90, Cs-134 and Cs-137 in marine sediment for the monitored marine areas defined by the Japanese government have also been stable during the past three months (February 2015 to April 2015).

Based on the sea area monitoring results and on other related information that has been made available, the IAEA considers the situation in the marine environment to be stable. The IAEA recommends that monitoring of the marine environment should continue.

Sea area monitoring data quality assurance

International experts visited Japan from 18-25 May to collect water and sediment samples from the sea near TEPCO's Fukushima Daiichi Nuclear Power Station. This visit followed two previous visits by IAEA experts in September and November 2014, where seawater samples were collected and analyzed (<https://www.iaea.org/sites/default/files/japan-ilc-brief.pdf>). During this third visit, in addition to seawater, the team also collected sediment samples to broaden the scope of the data reliability and comparability assessment. The objective of the visit was to support the quality assurance of radioactivity data collection and analysis by Japanese authorities. The team included two staff from the IAEA and two experts from the network of Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA) from Ireland and New Zealand as part of efforts to further increase transparency and continue to build confidence in marine monitoring results.

Food Products

National regulatory limits for levels of caesium radionuclides in food products remain in force. A surveillance and control regime is in place to monitor radionuclide levels in food (including seafood) in order to ensure that the food supply chain remains safe. Restrictions on food products from areas where radionuclide levels are found to be above the national regulatory limits are being used to prevent the distribution of food with radionuclide levels above these limits.

According to the information provided by the Japanese authorities, the situation with regard to food, fishery and agricultural production continues to remain stable and does not raise any new or immediate issues. A comprehensive system is in place to monitor the food supply. Measurements of caesium radionuclides in foodstuffs, together with appropriate regulatory action and the reporting of the monitoring results are helping to maintain confidence in the safety of food. For example, the Ministry of Health, Labour and Welfare reported results for 33,093 food samples between 30 March and 10 May with 33,059 samples (99.9 percent) with caesium radionuclide levels below the national regulatory limits. All 34 samples with levels of caesium radionuclides above these limits were pre-market samples.

The IAEA continues to consider that systems are in place and are being implemented that prevent food and agricultural products with levels of caesium radionuclides in excess of the national regulatory limits from entering the food supply chain. Food restrictions continue to be revised and updated as necessary, in line with food sampling and monitoring, and this indicates the continued vigilance of the authorities in Japan and their commitment to protecting consumers and trade. Based on the information that has been made available, the Joint IAEA / FAO Division understands that the measures taken to monitor and respond to issues regarding radionuclide contamination of food are appropriate, and that the food supply chain is under control.