

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

February, 2015

Section 1: Executive summary

- (1) The fact sheet uploaded in the link below is a summary of the current situation
http://www.kantei.go.jp/foreign/96_abe/decisions/2014/pdf/140221factsheet.pdf
- (2) Information update from the previous fact sheet
The following information was updated from the previous fact sheet: 1) important events that happened after October 2013 were added and 2) examples of “preventive and multi-layered” measures that were additionally adopted in December 2013.
- (3) The previous fact sheet is available online at
http://iaea.org/newscenter/news/2014/infcirc_japan0314.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 October)
Newly added topics in the past months since October are as follows. For additional details of these issues, please refer to the “related information” section.
 - Publication of the Preliminary Summary Report of the IAEA Review on Plans for the Decommissioning of TEPCO’s Fukushima Daiichi Nuclear Power Station Units 1 to 4 (Ministry of Economy, Trade and Industry (METI)) (February 17, 2015)
http://www.meti.go.jp/english/press/2015/0217_01.html
 - INES Rating Not Applicable to Contaminated Water Leakage in H4 Tank Area at Fukushima Daiichi NPS on 19 August 2013 (Nuclear Regulation Authority(NRA)) (February 12, 2015)
<http://www.nsr.go.jp/data/000096398.pdf>
 - Cosmic "Muon" rays to look inside Fukushima reactors as TEPCO begins testing (Tokyo Electric Power Company (TEPCO)) (February 9, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1248057_6844.html
 - Detailed analysis results regarding the water quality of the groundwater being pumped out for by-passing at Fukushima Daiichi Nuclear Power Station (METI) (February 5, 2015)
http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20150205_01a.pdf

- TEPCO announces safety improvements after accidental death of two workers at Fukushima plants (TEPCO) (February 3, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1247952_6844.html
- TEPCO reports major progress in water treatment, but completion target date extended due to implementation of new technologies and to ensure worker safety (TEPCO) (January 23, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1247689_6844.html
- Fuel removal from Unit 4 reactor building completed at Fukushima Daiichi (TEPCO) (December 22, 2014)
http://www.tepco.co.jp/en/press/corp-com/release/2014/1246703_5892.html
- Innovative technology to provide faster results on water quality at Fukushima (TEPCO) (November 27, 2014)
http://www.tepco.co.jp/en/press/corp-com/release/2014/1244484_5892.html
- Completion of the removal of the spent fuel assemblies from the Unit 4 (TEPCO) (November 5, 2014)
<http://www.tepco.co.jp/en/decommision/planaction/removal-e.html>
- Analysis of the TEPCO Fukushima Daiichi NPS Accident (NRA) (November 4, 2014)
<http://www.nsr.go.jp/data/000096407.pdf>
- New high-performance water treatment system at Fukushima set to increase capacity by a third while cutting waste 90 percent (TEPCO) (October 21, 2014)
http://www.tepco.co.jp/en/press/corp-com/release/2014/1243241_5892.html

(ii) Notable topics among recent updates

(a) TEPCO's booklet on the accident

TEPCO published on its webpage a booklet on the Development of and Lessons from the Fukushima Daiichi Accident. In order to prevent another accident from happening, TEPCO has been conducting investigation and analysis of the development of the Fukushima Daiichi nuclear accident. In the booklet, TEPCO reports on the results of these investigations and explains the lessons learned from the accident, namely the information on the cause of the accident, its development, and future responses.

<http://www.tepco.co.jp/en/decommision/accident/index-e.html>

(b) Completion of the Fuel Removal from the Unit 4

At the time of the accident, all of the fuel rods in the Unit 4 had been transferred into and stored in the spent fuel pool as part of the periodic inspection (although a hydrogen explosion did occur). They remained relatively undamaged. Fuel removal work at Unit 4 started on November 18, 2013 and removal of all the 1533 fuel assemblies (including both of the spent fuel and unirradiated fuel assemblies) and their transfer to the common pool outside the Unit 4 (some of them to the spent fuel pool of the Unit 6) were completed on December 22, 2014.

(c) The evacuation order was lifted in Minamisoma city

On November 26, 2014, the government lifted the evacuation order on the specific evacuation-recommended spots in Minamisoma city, Fukushima Prefecture, for the

dose levels of the spots had already become by far lower compared with those at the designation; it was made sure the dose levels were lower than 20mSv, which is the condition for the lift of the evacuation order by the Government.

(d) Recent updates on the sub-drain system

Reducing groundwater flowing into the reactor buildings, the turbine buildings and the seaside areas can be achieved by sub-drain water pumping. In addition to the groundwater bypassing, which is already in operation, pumping out groundwater from the point much closer to the turbine buildings is expected to reduce the groundwater inflow to the buildings.

Sub-drain control systems consist of pumping system, treating system and discharging system. The former two systems for test operation have been granted authorization by the NRA on August 6, 2014 and on October 21, 2014.

On December 25, 2014 TEPCO applied for a change of Implementation Plan for sub-drain control systems operation to discharge the treated water to the sea in accordance with the regulatory requirements and the NRA granted authorization to the discharging system on January 21, 2015. After being pumped out, the groundwater goes through sub-drain purification systems and the treated water is checked (This analysis result of treated groundwater will be announced by TEPCO). TEPCO and the Government of Japan are now explaining the measure, its function, and its effect to the local stakeholders, such as fishermen's unions and the Fukushima prefectural government. It has been made clear that without getting consent from these stakeholders, releasing this groundwater to the sea will not be conducted.

(e) Decontamination of the contaminated water by the multi-nuclide removal equipment

- (1) The multi-nuclide removal equipment removes radionuclides from the contaminated water, and therefore reduces risk. The existing multi-nuclide removal equipment (known as ALPS: Advanced Liquid Processing System) aims to reduce the levels of densities of 62 nuclides in contaminated water to the legal discharge limits or lower. (ALPS cannot remove tritium.)

In order to accelerate the processing of the contaminated water, TEPCO installed additional equipment similar to the existing one and a new type of equipment which provides higher performance than the existing one. The installation of the new type was financed by the Government, and the equipment is expected to boost water treatment capacity by 500 tons a day and raise total water treatment capacity to 2,000 tons a day. Also, it is able to reduce secondary wastes by more than ninety percent.

- (2) A leakage of water from a pipe connecting the ALPS equipment and water storage tanks was found on December 17, 2014, and the water contained about 120 Bq/L of total β at the maximum. The leaked water had already been processed by ALPS when the leakage was found, and no leakage was found to the sea area.
- (3) Regarding the initial plan to decontaminate all the highly contaminated water stored in tanks located at the Fukushima Daiich Nuclear Power Station by the end of March, 2015, TEPCO announced on January 23 that the company decided to reconsider this plan due to the delay of the decontamination process. The company now aims to complete this until the end of May this year.

(f) TEPCO changed its plan to freeze the connection area of the trench (in preparation for the installation of the frozen soil wall)

The frozen soil wall measure aims to reduce the volume of groundwater inflow into the buildings by surrounding the buildings with frozen-soil walls (a national subsidized project with the budget of JPY 31.9 billion). Technical validation for countermeasures for high-velocity groundwater and for controlling groundwater level has been conducted since last August, and small scale test succeeded in construction of frozen soil wall. The construction work began from June 2nd 2014.

In order to prepare for the installation of the frozen soil wall to prevent the groundwater from flowing into the turbine buildings, the contaminated water in the trench is needed to be removed. In this process, freezing the connection area of the trench and the turbine building and pumping out the contaminated water inside the trench was first attempted. Water cutoff material was to finally be injected into the trench and shafts. However, due to the technical difficulties, these freezing countermeasures were found to be unfeasible, and the company now plans to fill up the trench with a special kind of cement and then remove the contaminated water remaining in the trench. By the end of the last year, 2500 tons out of 5000 tons of contaminated water which was remaining in the trench was removed and replaced by the cement.

- (g) In order to prepare for the removal of Unit 1 temporary cover, as a first step, TEPCO began taking measures on October 22 to prevent scattering of the radioactive materials at the debris removal work. This is a step towards dismantling the Unit. After drilling 48 holes on the rooftop, dust inhibitor will be sprinkled from these holes. The removal of the temporary cover itself is to be started next March.

On October 28, a sprinkler which was operating to sprinkle dust inhibitor above the Unit was pushed by a gust of wind and made a hole greater than expected, but no significant change was observed in air dose.

For further information on the measures to be taken regarding the removal of Unit 1 temporary cover, please refer to the video clip uploaded at the following URL.

http://www.tepco.co.jp/en/news/library/archive-e.html?video_uuid=kletx9w5&catid=61795

- (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 JESCO (Japan Environmental Safety Corporation) 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 and consequently the contract of

construction work for stock yards was made in January 2015 (The construction work started on February 3).

On January 16, 2015, MOE announced they would make every effort to start the delivery of removed soil through the pilot-scale transportation before March 11, 2015, if the requests from Fukushima prefecture be fulfilled.

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

- (1) Recent update

TEPCO announced this September 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 Nuclear Power Station. 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 fishermen’s unions and Fukushima prefectural government.

In April 2014, the fishermen’s unions showed their intention to accept the plan of conducting this groundwater bypassing. In addition, from April 9th, 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 16th, 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 21st.

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 secure 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 and URL of the progress report are as follows:

- The Progress status report as of October 30, 2014 is available online

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20141030-e.pdf>

The report describes recent updates on the decommissioning process such as spraying anti-scattering agents and investigation conducted in preparation for dismantling the Unit 1 reactor building cover. The following figure shows a part of the recent progress.



Figure 1: Opening of roof panel holes and spraying of anti-scattering agents

- The Progress status report as of November 27, 2014 is available online

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20141127-e.pdf>

The report describes recent updates on the decommissioning process such as the fuel removal from the Unit 4 spent fuel pool and the removal of contaminated water from seawater-pipe trenches. The following figures show some parts of the recent progress.



Figure 2: Spent fuel storage in common pool



Figure 3: Hole for filling Unit 2 seawater-pipe trench tunnel sections

- The Progress status report as of December 25, 2014 is available online

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20141225-e.pdf>

The report describes recent updates on the decommissioning process such as the completion of fuel removal from the Unit 4 spent fuel pool and the filling of Unit 2 seawater-pipe trench tunnel sections. The following figure shows a part of the recent progress.



Figure 4: Transfer of the final fuel transportation container

- The Progress status report as of January 29, 2015 is available online

<http://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20150129-e.pdf>

The report describes recent updates on the decommissioning process such as the investigation of fuel debris inside Unit 1 reactor and Strontium removal operation by cesium absorption apparatuses (KURION/SARRY).

(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 Nuclear Power Station Units 1-4 (Outline) (Ministry of Economy, Trade and Industry (METI) (Updated on October 16, 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 nuclear power stations

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

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

Related information:

- Regarding the fatal accident at Fukushima Daiichi NPS involving a cooperative company employee working on a rainwater receptacle tank (TEPCO) (January 20, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1247504_6844.html
- Regarding the fatal accident at Fukushima Daini NPS involving a cooperative company employee working in Units 1 and 2 waste treatment facility (TEPCO) (January 20, 2015)
http://www.tepco.co.jp/en/press/corp-com/release/2015/1247513_6844.html
- Leakage of Water Treated by the Multi-Nuclide Removal Facility (ALPS) at Fukushima Daiichi NPS – Confirm No Leakage to Ocean (NRA) (December 19, 2014)
<http://www.nsr.go.jp/data/000091153.pdf>
- TEPCO issues statement on Woods Hole report finding very low level of cesium 134 from Fukushima off California coast (TEPCO) (November 11, 2014)
http://www.tepco.co.jp/en/press/corp-com/release/2014/1243939_5892.html

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 Nuclear Power Station has detected no significant increase in radiation levels.

(2) Noteworthy change in data during the period from October 2014 to January 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.

* Slight changes in the density of caesium-134 were reported in November on 13 and 19, in December on 18 and 25, and in January on 8.

* Slight changes in the density of caesium-137 were reported in November on 13, 19 and 21, in December on 18 and 25, and in January on 8 and 15.

(3) Monitoring result data

The monitoring results in the air at the site of the Nuclear Power Station 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/2014/images/handouts_2tb-east-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 Nuclear Power Station

(1) Outline of the item

The monitoring of air dose rates in the 20 Km radius zone around Fukushima Daiichi Nuclear Power Station has been conducted at 50 points in the zone (the types of detectors used for monitoring are NaI scintillation detectors and/or an 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 Nuclear Power Station 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 Nuclear Power Station have been in a downward trend, and the monitored air dose rates were stable from October 2014 to January 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 Nuclear Power Station from October 2014 to January 2015:

- October: <http://radioactivity.nsr.go.jp/en/list/239/list-201410.html>
- November: <http://radioactivity.nsr.go.jp/en/list/239/list-201411.html>
- December: <http://radioactivity.nsr.go.jp/en/list/239/list-201412.html>
- January: <http://radioactivity.nsr.go.jp/en/list/239/list-201501.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 Nuclear Power Station

(1) Dust

The monitoring results of dust obtained from October 2014 to January 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 19 January, 2015) of dust:

http://radioactivity.nsr.go.jp/en/contents/10000/9348/24/223_20150119.pdf

(2) Soil

Radiation monitoring of soil is conducted as appropriate. The latest monitoring of soil was conducted during January 2015. The following URL leads to the monitoring results (dated January 28, 2015) of soil:

http://radioactivity.nsr.go.jp/en/contents/10000/9386/24/495_20150128.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 October 2014 to January 2015

The estimated and measured values were relatively stable from October 2014 to January 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 Nuclear Power Station have indicated that the radiation levels outside the port or in the open sea have been relatively stable.

(2) Updates during the period from October 2014 to January 2015

The sea area monitoring results from October 2014 to January 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 Nuclear Power Station, 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 Nuclear Power Station, 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 Nuclear Power Station. 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 Nuclear Power Station 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 80% (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 Nuclear Power Station.

<http://josen.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 October 2014, 25,199 samples were taken and analysed. Among these samples, 36 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.14 percent of all samples.

During the month of November 2014, 29,381 samples were taken and analysed. Among these samples, 70 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.24 percent of all samples.

During the month of December 2014, 31,094 samples were taken and analysed. Among these samples, 46 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.15 percent of all samples.

During the month of January 2015, 15,610 samples were taken and analysed. Among these samples, 49 samples were found to be above the limits (caesium-134+caesium-137: 100 Becquerel/kg). This represents 0.31 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 October 2014 to January 2015)

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

- (i) Products whose distribution was newly restricted in October 2014
 - Wild mushrooms produced in Yanaizu-machi, Fukushima prefecture
 - Wild mushrooms produced in Susono-shi, Shizuoka prefecture
- (ii) Products whose restrictions were removed in October 2014
 - Log-grown shiitakes (outdoor cultivation) produced in Hanamaki-shi, Kitakami-shi and Yamada-machi, Iwate prefecture that are managed based on shipment and inspection policy set by Iwate prefecture
 - Soybeans produced in Date-shi (limiting former Sekimoto-mura and former Tomino-mura), Koriyama-shi (limiting to former Takano-mura) Kori-machi (limiting to former Danzaki-mura), Fukushima prefecture
 - log-grown shiitakes (outdoor cultivation) produced in Sakura-shi, Kimitsu-shi, Futtsu-shi, and log-grown shiitakes (indoor cultivation) produced in Kimistu-shi that are managed based on shipment and inspection policy set by Chiba prefecture
 - Vermiculated puffer captured in Fukushima offshore for Governor of Fukushima
 - Japanese dace captured in Tadami river in Fukushima prefecture (limiting upper reaches from Taki dam and including its branches but excluding upper reaches from Tadami dam)
 - Log-grown shiitake (indoor cultivation) produced in Nikko-shi and Nasushiobara-shi that are managed based on shipment and inspection policy set by Tochigi prefecture

- (iii) Products whose distribution was newly restricted in November 2014
 - none
- (iv) Products whose restrictions were removed in November 2014
 - Chestnuts produced in Iwaki-shi
 - Kiwi fruits produced in Soma-shi
 - Pacific cod captured in Ibaraki offshore
 - Log-grown shiitakes (indoor cultivation) produced in Futtsu-shi that is managed based on shipment and inspection policy set by Chiba prefecture
- (v) Products whose distribution was newly restricted in December 2014
 - soybeans produced in Otama-mura (limiting to former Oyama-mura, excluding which is controlled under the management policy set by Fukushima prefecture) and Motomiya-shi (limiting to former Shiroiwa-mura)
- (vi) Products whose restrictions were removed in December 2014
 - White spotted char captured in Tadami river (limiting lower reaches from Uwada dam, but including its branches)
- (vii) Products whose distribution was newly restricted in January 2015
 - none
- (viii) Products whose restrictions were removed in January 2015
 - Pacific cod captured in part of Fukushima offshore
 - Whitespotted chars captured in Nippashi River (limiting lower reaches from Tokyo electric power company's Kanagawa power plant, but including its branches and excluding upper reaches from Higashiyama dam)
 - Bamboo shoots produced in Kashiwa-shi and Shiroi-shi
 - Yuzus produced in Iwaki-shi

(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 released by the Fisheries Agency of Japan

Since the accident at the TEPCO's Fukushima Daiichi Nuclear Power Station (NPS), 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 this Report.

In Japan, in order to prevent the fishery products exceeding the limits from being distributed to the market, about 50 thousand samples of fishery species have been inspected by checking their levels of radioactive material; where the levels exceeded the limits, restrictions and suspensions on distribution and shipping were implemented appropriately.

In this Report, yearly trend of inspection results of radioactive caesium is displayed with respect to the main habitats and fish species. The radioactive caesium level in fishery products has greatly decreased, and today, samples exceeding 100 Bq/kg can be observed only in limited areas and fish species.

The report is available at the following URL:

(Full Report)

<http://www.jfa.maff.go.jp/e/inspection/pdf/fullreport.pdf>

(Summary)

<http://www.jfa.maff.go.jp/e/inspection/pdf/summary.pdf>

(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:

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

(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/tepc/lhc/pr_140604.html

(4) Other Related Topics

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

“Report of the Research on Thyroid Gland Examinations, etc. of Workers at the TEPCO’s Fukushima Daiichi Nuclear Power Plant has been Released” is available on the following webpage. (Updated on August 5, 2014)

http://www.mhlw.go.jp/english/topics/2011eq/workers/tepc/ort/pr_140805.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 8, 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.

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

(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.

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

(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>

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 2014 Japan provided updates in October on 7, 14, 21 and 29, in November on 4, 12, 18 and 25, in December on 2, 9, 16 and 24 in the year 2014, in January on 6, 13, 20 and 27, and so far in February on 3, 10 and 17 in the year 2015. 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 Nuclear Power Station 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 Nuclear Power Station 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 Nuclear Power Station. In June and October 2014, in order to supplement such briefings, it has arranged for field observation tours of Fukushima Daiichi Nuclear Power Station 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:

http://www.nsr.go.jp/english/library/data/special-report_20140204.pdf

4. 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 Nuclear Power Station, 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 Nuclear Power Station
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:

<http://www.ndf.go.jp/higyomu/English20140904.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) “International Collaborative Research Center on Decommissioning” (tentative name)

- (i) Ministry of Education, Culture, Sports, Science and Technology (MEXT) is planning to establish an international research center on decommissioning bringing together expertise and knowledge from academia, industry and government. This research center is not only to provide technologies gathered during academia-industry-government cooperation to TEPCO and make research results reflected during the decommissioning and reconstruction of Fukushima, but it is also to provide a research database as an international public asset. For further information, please refer to the following webpage:

<http://www.mofa.go.jp/files/000051398.pdf>

- (ii) The functions of the research center 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

5. 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 February 2015 report ‘Events and highlights on the progress related to recovery operations at Fukushima Daiichi NPS’

Third International Decommissioning Peer Review Mission

The third International Decommissioning Peer Review Mission to Japan took place from 9 to 17 February 2015. The scope of the Mission covered the issues mentioned in Sections 2, 6 and 7 of the Events and highlights on the progress related to recovery operations at Fukushima Daiichi Nuclear Power Plant¹. The objective of the Mission was to provide an independent review of the activities associated with revisions to the planning and implementation of the Fukushima Daiichi Nuclear Power Plant decommissioning. The Mission was conducted based on IAEA Safety Standards and other relevant safety and technical advice, aimed at assisting the Government of Japan in the implementation of the Mid and Long-Term Roadmap Towards Decommissioning of TEPCO’s Fukushima Nuclear Power Station (the Roadmap).

Currently a Preliminary Summary Report from the Mission is available [online on the IAEA webpage](#). This report provides highlights of important progress (Acknowledgments) in 20 areas such as management of contaminated water including countermeasures against groundwater ingress, removal of spent fuel assemblies and damaged fuel debris, and institutional and organisational matters. The report also offers 15 Advisory Points where the IAEA team concluded that current practices could be improved, such as the enhancement of long term management of

¹ The information provided by TEPCO on 24 February 2015, regarding high radioactivity in one of the drainage channels (“Drainage K”) and TEPCO’s countermeasures, was not available to the IAEA mission team during the meeting, and therefore was not discussed at that time. The IAEA is currently assessing the received information.

decommissioning and radioactive waste including contaminated water, taking into account both IAEA safety standards and the experience from planning and implementation of decommissioning programmes in other countries.

Sea area monitoring results

Sea area monitoring data continues to be published regularly by 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, strontium - 90 (Sr-90), caesium - 134 (Cs-134) and caesium - 137 (Cs-137) in seawater have been relatively stable, with no significant changes observed during the last three months (October 2014 to January 2015). The levels of Sr - 90, Cs - 134 and Cs - 137 in marine sediment for the observed marine areas defined by the NRA have also been stable during the past three months (October 2014 to January 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 and it should continue to be monitored.

Sea area monitoring data quality assurance

An IAEA expert team visited Japan from 8 to 14 September 2014 to collect seawater samples from near TEPCO's Fukushima Daiichi Nuclear Power Plant, with a view to organizing an interlaboratory comparison in support of sampling procedures and high - quality analysis of radioactivity by the responsible authorities in Japan. The visit by the experts was the first follow - up activity regarding sea area monitoring presented in the report by the IAEA International Peer Review Mission on the Roadmap which, in late 2013, had reviewed Japan's efforts to plan and implement the decommissioning of the plant. The water samples collected during the visit were shared by the IAEA Environmental Laboratories and Japanese laboratories, and were analysed independently by each.

A second IAEA expert mission to Japan was carried out from 4 to 7 November 2014 to present conclusions from the interlaboratory comparison for Cs-134 and Cs-137 and to collect a new set of seawater samples offshore Fukushima for a further interlaboratory comparison. The two IAEA experts reported that the results for all five seawater samples analysed were equivalent, within the range of uncertainties. The experts also presented the conclusions of a proficiency test conducted with 30 laboratories worldwide, including 12 in Japan. The test was focused on the analysis of H-3 (tritium), Sr-90, Cs-134 and Cs-137 in seawater. It showed a very good level of proficiency for the Japanese laboratories. In conclusion, both tests have shown a high level of accuracy of the data reported by Japanese laboratories. This conclusion should increase confidence that the data regularly reported by NRA presents a reliable picture of the levels of radioactivity in the near-shore coastal waters east of Japan.

Further proficiency tests and interlaboratory comparisons involving Japanese laboratories will be regularly organized by the IAEA over the next two years to assess the quality of reported

monitoring data. Two interlaboratory comparisons are planned for 2015, for radionuclides in seawater, sediment and fish samples.

Monitoring of the terrestrial environment

Forty Japanese laboratories carrying out radionuclide analysis of samples have shown reliable results for terrestrial environment and food monitoring. This reliability was demonstrated through successful participation in the worldwide proficiency tests organized by the IAEA over the last three years. As a result of their regular participation in these proficiency tests over the last three years, the performance of these 40 laboratories has improved such that they are now performing better than the average of the other participating laboratories of these proficiency tests.

Based on the suggestion of the IAEA, a new internal interlaboratory comparison program has been started by Japan with the support of the IAEA and the assistance of: Tsukuba University; the Advanced Institute of Science and Technology (AIST); and the Japan Chemical Analysis Center (JCAC). The main goal of this program is to optimize sampling and measurement techniques of radiocaesium in the freshwater environment and to further develop a related quality control system.

An expert from the IAEA visited the AIST in Japan in January 2015 to help evaluate an intercomparison study that was organized and conducted through the AIST. The expert participated in quality control measurements of the intercomparison samples in advance of the visit, and the evaluation of the dataset of the intercomparison was undertaken during the visit.

Food Products

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 those limits. Such restrictions are lifted when extensive testing confirms that food collected from a specific area no longer exceeds the national regulatory limits; these restrictions are upheld or revised in cases where food items still need to be controlled because they are above these limits. A comprehensive system is in place to monitor the food supply. Measuring the levels of caesium radionuclides in foodstuffs, together with appropriate regulatory action and the reporting of the monitoring results, help in maintaining confidence in the safety of food.

Based on the information provided, the authorities in Japan are continuing to implement a comprehensive programme of food monitoring. The current 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. 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.

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.