

CURRENT STATUS AFTER THE NUCLEAR POWER PLANT ACCIDENT

COMMUNICATION FROM JAPAN

Revision

The following communication, received on 30 June 2022, is being circulated at the request of the Delegation of Japan.

ABSTRACT

In response to the accident at Tokyo Electric Power Co. Fukushima Daiichi Nuclear Power Station (NPS) in 2011, Japan has taken a comprehensive approach in securing food safety. The accumulated monitoring data demonstrates that the level of radioactivity is very low and Japanese food has been safe for the public. The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture has evaluated that measures to monitor and respond to issues regarding radionuclide contamination of food are appropriate, that the food supply chain is controlled effectively by the relevant authorities and that the public food supply is safe. The majority of the countries and regions which provisionally introduced import measures on Japanese food has lifted them based on the scientific evidence, and the number of countries and regions which still maintain the measures are reduced to 14. Given the provided evidence, there is no need to impose additional import control measures and Japan calls on Members to remove existing measures. Regarding the controlled discharge of the ALPS (Advanced Liquid Processing System) treated water, Japan takes measures considering international law and practice, and the impact on the environment, marine biota as well as the health and safety of people, and continues to receive IAEA reviews and provide relevant information to the international community.

1 INTRODUCTION

1.1. In response to the accident at Tokyo Electric Power Co. (TEPCO) Fukushima Daiichi Nuclear Power Station (NPS) in March 2011, 55 countries and regions¹ introduced import measures on food from Japan, and 41 have lifted them based on objective assessment. However, 14 countries and regions¹ still maintain import measures, such as import bans, additional test requirements and certificates, and non-detectable level tolerance at border inspection tests.

1.2. This document updates the situation of radioactivity surrounding Japanese food, 11 years after the accident at the NPS. In particular, it provides an update on the risk management measures taken to secure food safety and to prevent environmental impacts from the NPS, and the resulting monitoring data, so that a more objective assessment of risk and review of the import measures on Japanese food, supposed to be provisionally adopted by the Members would be facilitated.

¹ Total numbers have increased from 54 to 55, and from 13 to 14, due to the change of regulation in the European Union in September 2021, which resulted in different measures taken by the European Union and the United Kingdom (GB) and a need for separate counts.

2 FOOD SAFETY CONTROL AND STATUS OF SAFETY IN JAPANESE FOOD

2.1. Japan, soon after the accident, started decontamination such as of the crop land and fruit trees, control over feed and agricultural input and introduced a risk-based food monitoring scheme. The effective dose from dietary intake has also been surveyed.

2.2. Japanese maximum permissible levels for radioactive caesium in food (JMLs)² were set to meet the intervention exemption level of the Codex Alimentarius Commission (Codex), 1mSv/year, a level considered as safe for the public, and in consideration of the released nuclides and with highly conservative and hypothetical assumptions on the safe side, including that 50% of the food intake is contaminated. Accordingly, the JML for food in general is set as 100 Bq/kg, while the corresponding Codex guideline level is 1,000 Bq/kg and even 10,000 Bq/kg can be adopted and considered as safe for food with small consumption (CXS 193-1995).

2.3. The monitoring has covered a wide variety of items including that consumed in large amounts and with elevated concentration of radionuclides in consideration of the effective dose. It is mainly performed at the production stage and applies targeted sampling. The monitoring plans have been annually revised, reflecting the past test results, focusing on the items with higher concentration. Testing samples have been reduced³ due to undetectable level of radioactivity, especially in farm products. Sampling also includes wild harvests under shipment restriction. Including these results, all are well below the above Codex guideline levels considered as safe for human consumption.^{3,4}

2.4. In reference to the national regulatory standards, the results of major food are all within the JMLs.⁴ Non-compliance cases are limited to seasonal wild harvests rarely consumed and traded in local markets.⁵ The national laws mandate that items exceeding the stringent JMLs are recalled and disposed of, and their shipment is suspended. If there are exceeding cases in a particular item over an area, Japan suspends shipment of the item from the area. Japan's regulatory framework thus prevents the food exceeding the JMLs from entering the food chain and being exported.⁶

2.5. Non-compliance in food imported from Japan has not been detected by the destination countries for more than eight years⁷, while non-compliance has been continuously detected in products such as mushrooms originated from countries affected by the Chernobyl accident.⁸

2.6. The total dietary study conducted since September 2011 at plural sites including Fukushima shows that the estimated annual effective dose from food intake remains digits smaller than the intervention exemption level of the Codex.⁹ Both food monitoring and dietary exposure assessment

² JMLs (Bq/kg) are 50 for milk and infant food, 10 for drinking water and 100 for other food.

³ Approximately 280 thousand in JFY 2019 and 41 thousand in JFY 2021. Farm samples especially beef were reduced, following the revision of the monitoring guidelines in recent years.

Source: Monthly data of Ministry of Health, Labour and Welfare (MHLW)
https://www.mhlw.go.jp/english/topics/2011eq/index_food_radioactive.html.

⁴ Data sourced from the monthly data of MHLW and summarized by MAFF, JFY2019-2021

<https://www.maff.go.jp/e/policies/market/reference/attach/pdf/reference-18.pdf> and the archives.

⁵ The concentration of Cs134+Cs137 in recall cases were in seasonal wild harvests: 110-260 Bq/kg in leaf buds, 110-930 Bq/kg in uncommon mushrooms and 130-160 Bq/kg in local honey (below 0.8 %, out of around 6 thousand samples of marketed items, even by targeted sampling) in JFY2021.

⁶ Apart from the governmental monitoring, the fisheries association in Fukushima prefecture conducts screening tests for every catch/lot of wild marine seafood before shipment. A few cases exceeding the JML were detected in black rockfish between February 2021 and January 2022. The shipment is restricted to prevent it from entering the market and being exported. It is a minor wild marine species not in the national statistics. Around 33 thousand seafoods have been monitored (JFY 2019-2021)³ and there are only three cases (below 0.01%) that exceeded the JML including that detected by the association and confirmed by the prefecture.

The research results by the national institute suggested the fish had stayed in the port of NPS.

⁷ The last case of non-compliance with JML in Japanese food was dried mushroom (Cs134+Cs137: 167 Bq/kg), detected by Hong Kong in August 2013.

⁸ Cs137: 674-2,304 Bq/kg in mushrooms (in 2020 and 2021).

Source: RASFF Portal, European Commission

<https://webgate.ec.europa.eu/rasff-window/portal/?event=searchResultList>.

⁹ Results of biannual market basket surveys: Effective dose from radioactive caesium was less than 0.0010mSv/year in early 2021, around 1/1,000 of the intervention exemption level.
https://www.mhlw.go.jp/shinsai_jouhou/topics.html (in Japanese).

provide consistent evidence which confirm effectiveness of the control system in Japan and safety of Japanese food.

2.7. The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture stated in March 2022, "measures to monitor and respond to issues regarding radionuclide contamination of food are appropriate, that the food supply chain is controlled effectively by the relevant authorities and that the public food supply is safe".

2.8. A report "Food Safety and Radionuclides after March 2011" has been published recently under our one-stop "Reference" website, along with the short video launched on the occasion when it marked a decade after the Great East Japan Earthquake. It summarizes the control measures taken after the accident, evidence on food safety and the comparative data in the foreign countries.

3 STATE OF THE MARINE ENVIRONMENT AROUND THE TEPCO FUKUSHIMA DAIICHI NUCLEAR POWER STATION AND PLANNED DISCHARGE OF THE ALPS TREATED WATER

3.1. Japan continuously monitors the sea area around the NPS¹⁰ and reports the updates to the IAEA. On 7 March 2022, the IAEA provided their assessment on the monitoring results during July to September 2021 and stated, "no significant changes were observed in the monitoring results for seawater, sediment and marine biota, including fishery products", "the levels measured by Japan in the marine environment are low and relatively stable".

3.2. In April 2021, Japan announced the Basic Policy on handling of the treated water stored at the NPS, which selected planned discharge into the sea, subject to domestic regulatory approvals by the Nuclear Regulation Authority (NRA). Japan takes measures considering international law and practice. The water is to be repurified and diluted to meet the regulatory standards for discharge. As practiced by other nuclear power plants in the world, only the water which complies with the national standards set based on international standards is to be discharged, so that the safety of the surrounding environment is secured. The actual discharge will be conducted approximately after two years from the announcement, and the enhanced monitoring of the marine environment has been initiated this fiscal year, in consideration of the radionuclides in ALPS treated water.

3.3. To ensure safety and enhance transparency, a series of IAEA reviews are to be conducted before, during and after the discharge of ALPS treated water¹¹, overseen by the Task Force consisting of the IAEA staff and 11 internationally recognized experts from Argentina, Australia, Canada, China, France, the Marshall Islands, the Republic of Korea, the Russian Federation, the United Kingdom, the United States and Viet Nam. The first mission examined the TEPCO's implementation plan for the discharge and the radiological impact assessment on humans, marine biota and the environment in February. The implementation plan, which considered the discussions with the NRA and the findings and observations of IAEA is under the procedure of approval by the NRA.¹² The review continues and the discharge will not start until final approval of the pre-service inspection is granted.

3.4. Japan has continuously explained the status of TEPCO Fukushima Daiichi NPS and the process for controlled discharge of the ALPS treated water to the international community such as through briefing sessions and monthly reports to the diplomatic missions in Tokyo, and direct communication with the food safety authorities of the importing countries who accepted the offer. Japan will continue such efforts, at the same time, expects the authorities to have risk communication with their people based on facts and science.

¹⁰ Japan has been publishing food and environmental monitoring data, as well as relevant information concerning the NPS, through MAFF's one-stop "Reference" website. The status of seawater around the NPS can be viewed in real-time through TEPCO's website and weekly at the Nuclear Regulation Authority's website.

¹¹ There were two missions, (i) safety assessment review on the TEPCO's plan for the discharge of ALPS treated water and (ii) regulatory review on NRA, respectively in February and March 2022. The reports are available at the IAEA's "Fukushima Daiichi Treated Water Discharge" site.

¹² TEPCO needs approval from NRA for any change in the implementation plan concerning the facilities and operation originally approved in 2013.

4 CONCLUSION

4.1. In summary, the evidence shows that Japanese food has been safe for the public for many years and we have a very effective control system in place which guarantees trade of safe food and that fulfils the national standard, for both domestic and international markets.

4.2. The joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture has evaluated that Japan's measures and response against radionuclide contamination in food are appropriate and that the food supply chain is controlled effectively, and that the public food supply is safe. Japan keeps the monitoring data and relevant information highly transparent and continues collaboration with the international organizations.

4.3. Risk of water contamination at the NPS is constructively managed and there has been no detectable change in marine environment and the biota. Japan will implement the discharge of the ALPS treated water in accordance with international practice and strictly comply with regulatory standards regarding safety, under IAEA review. Thus, the discharge cannot be a reason for imposing import measures on Japanese food.

4.4. Given the evidence provided, there is no need to impose additional control measures on Japanese food and Japan calls on Members to remove their measures.

References

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<http://www.maff.go.jp/e/policies/market/reference/reference.html>

Presentations

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- 2) Procedure of controlled discharge, Agency for Natural Resources and Energy, METI

Links - Japan

- 1) Information on the Great East Japan Earthquake – Food, Ministry of Health, Labour and Welfare
https://www.mhlw.go.jp/english/topics/2011eq/index_food.html
- 2) Results of the monitoring on radioactivity level in fishery products
<https://www.jfa.maff.go.jp/e/inspection/index.html>
- 3) Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station Units 1-4
<https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/index.html>
 - a) ALPS treated water (including the Basic Policy)
<https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/atw.html>
 - b) Briefing Session on the Current Status of Advanced Liquid Processing System (ALPS) Treated Water at Fukushima Daiichi Nuclear Power Station, May 2022
https://www.meti.go.jp/english/press/2022/0510_001.html
- 4) Radioactive Material Monitoring in the Water Environment in and around Fukushima Prefecture
<http://www.env.go.jp/water/kaiyo/monitoring.html> (in Japanese)
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- 5) Monitoring information of environmental radioactivity level, Nuclear Regulation Authority
<https://radioactivity.nsr.go.jp/en/>
- 6) Radioactive Concentration measured by Seawater Radiation Monitor near Fukushima Daiichi Nuclear Power Station
<http://www.tepco.co.jp/en/nu/fukushima-np/f1/seawater/index-e.html>

Links - International organizations

- 1) GENERAL STANDARD FOR CONTAMINANTS AND TOXINS IN FOOD AND FEED (CXS 193-1995)
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<https://www.iaea.org/newscenter/focus/fukushima/status-update>
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<https://www.iaea.org/sites/default/files/22/03/events-and-highlights-december-2021.pdf>
 - b. Interlaboratory Comparisons 2017–2020: Determination of Radionuclides in Sea Water, Sediment and Fish, IAEA Analytical Quality in Nuclear Applications, 2021
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<https://www.iaea.org/topics/response/fukushima-daiichi-nuclear-accident/fukushima-daiichi-treated-water-discharge>
 - 4) Annals of the International Commission on Radiological Protection (ICRP), PUBLICATION 103, The 2007 Recommendations of the International Commission on Radiological Protection, p103 (Effective dose limit for the public:1mSv in a year)
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