



Meeting of States Parties

Distr.: General
21 August 2023

Original: English

Thirty-third Meeting

New York, 12–16 June 2023

Agenda item 14

Reports of the Secretary-General under article 319 for the information of States parties on issues of a general nature, relevant to States parties, which have arisen with respect to the United Nations Convention on the Law of the Sea (A/77/331 and A/78/67)

Note verbale dated 15 August 2023 from the Permanent Mission of Japan to the United Nations addressed to the Secretariat

The Permanent Mission of Japan to the United Nations presents its compliments to the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations, in its capacity as the secretariat of the Meeting of States Parties to the United Nations Convention on the Law of the Sea, and, in accordance with the rules of procedure of the Meeting, kindly requests that the document entitled “Recent developments concerning Japan’s plan to discharge Advanced Liquid Processing System treated water into the sea at the Fukushima Daiichi nuclear power station in Japan” (see annex) be circulated to all parties to the Convention.

The Permanent Mission of Japan to the United Nations also requests that the present note verbale and its annex be registered as a document of the thirty-third Meeting, under agenda item 14.



Annex to the note verbale dated 15 August 2023 from the Permanent Mission of Japan to the United Nations addressed to the Secretariat

Recent developments concerning Japan's plan to discharge Advanced Liquid Processing System treated water into the sea at the Fukushima Daiichi nuclear power station in Japan

I. Introduction

In relation to document [SPLOS/33/14](#) dated 16 June 2023, which contains the “position of China on the issue of the disposal of nuclear-contaminated water of the Fukushima Daiichi nuclear power station in Japan”, Japan would like to draw the attention of the States parties to the recent developments that took place after the issuance of [SPLOS/33/14](#) concerning the planned discharge of Advanced Liquid Processing System (ALPS) treated water into the sea.

In particular, Japan would like to highlight recent developments which represent material changes in the situation concerning the planned discharge of ALPS treated water, namely the International Atomic Energy Agency (IAEA) safety review of ALPS treated water and its comprehensive report.

II. IAEA safety review and its comprehensive report

On 4 July 2023, IAEA published its comprehensive report,¹ summarizing the outcomes of its rigorous two-year review² to assess the safety of the planned discharge of ALPS treated water into the sea. As a result of its comprehensive review based on scientific evidence, IAEA has concluded that: (a) the approach to the discharge of the ALPS treated water into the sea and the associated activities by Japan satisfy relevant international safety standards; and (b) the planned discharge of the ALPS treated water will not harm people or the environment, including the marine environment.

In particular, the IAEA comprehensive report states that “based on its comprehensive assessment, the IAEA has concluded that the approach to the discharge of ALPS treated water into the sea, and the associated activities by TEPCO, NRA, and the Government of Japan, are consistent with international safety standards” (comprehensive report, p. v; see also p. 83).

IAEA further concluded that “the discharge of the ALPS treated water, as currently planned by TEPCO, will have a negligible radiological impact on people and the environment” (comprehensive report, p. v). Regarding transboundary effects, IAEA found that “the results of the radiological environmental impact assessment show that the estimated dose to populations in neighbouring countries will be negligible” (ibid., p. 28), and “activity concentrations in international waters will not be influenced by the discharge of ALPS treated water into the sea and the transboundary impacts are therefore negligible” (ibid., p. 80).

The comprehensive report also states that IAEA is committed to continued engagement with Japan on the discharge of ALPS treated water not only before but

¹ Available at <https://www.iaea.org/topics/response/fukushima-daiichi-alps-treated-water-discharge-comprehensive-reports>.

² IAEA has authority under its statute to develop and apply international safety standards. Based on this authority, IAEA reviewed the elements of the discharge plan against all relevant IAEA international safety standards.

also during and after the commencement of discharge and that additional review and monitoring by IAEA will continue. This means that IAEA will continue to be involved in Japan's monitoring activities. Should a problem be detected during the monitoring process such as detection of unusual value of concentration of the radioactive materials, Japan will take appropriate measures, including immediate suspension of the discharge, as stipulated in the discharge plan reviewed by IAEA. IAEA has "confidence in TEPCO's capability for undertaking accurate and precise measurements" (comprehensive report, p. 114). IAEA will also corroborate TEPCO data by sampling, analysis and laboratory comparison for ALPS treated water from the Fukushima Daiichi nuclear power station and for the environment surrounding the Fukushima Daiichi nuclear power station.³

1. How the IAEA review of the planned discharge was conducted

Prior to the start of the two-year review by IAEA in July 2021, Japan had consulted extensively with IAEA, which is the world's authority on radiation protection, including exposures to and discharge from radioactive material, and is known for its independence and scientific expertise on various topics relating to Fukushima and handling of the radioactive water stored in the Fukushima Daiichi nuclear power station site, including the evaluation and selection of appropriate methods for disposal.

The announcement by the Government of Japan to select "discharge into the sea" as the disposal method followed the extensive review and evaluation by IAEA, as well as comprehensive examinations by Japanese experts on various disposal methods for more than six years, with the input of IAEA.

In December 2013, IAEA issued a report after its review mission visited the Fukushima Daiichi nuclear power station site, which recommended that Japan should examine all options of disposal. Following the report, Japanese experts examined various methods, including long-term on-site and off-site storage and five specific disposal methods (geologic injection, discharge into the sea, vapour release, hydrogen release, and underground burial). The experts made their assessments of the various methods of disposal strictly on the basis of safety and technical feasibility, not of potential costs. They announced their recommendations in the report of February 2020 that discharge into the sea and vapour release are the only practical options. The report also stated that discharge into the sea could be implemented more reliably, with respect to mitigating environmental and human health impacts, given that this discharge method is commonly used among nuclear plants around the world; discharge facilities have positive track records for safety; and controlled discharges into the sea can be monitored most accurately.⁴ IAEA reviewed Japan's examinations and produced a report⁵ in April 2020 stating that Japanese experts' recommendations were "based on a sufficiently comprehensive analysis and on a sound scientific and technical basis" and that these two options are "technically feasible and would allow the timeline objective to be achieved", while concurring with the experts' assertion that the other three options are "technically immature and unproven and implementation of any of them will require resolution of challenging unresolved issues". IAEA further called upon Japan to promptly choose one of the two preferred options, underscoring that "a decision on the disposition path for the stored ALPS treated water ... must be taken urgently". All of these IAEA reports are publicly available.

³ "Status of IAEA's independent sampling, data corroboration, and analysis", available at https://www.iaea.org/sites/default/files/3rd_alps_report.pdf, p. 6.

⁴ See https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/20200210_alps.pdf.

⁵ Available at <https://www.iaea.org/sites/default/files/20/04/review-report-020420.pdf>.

Following these developments, the Government of Japan announced its Basic Policy⁶ in April 2021, which selected discharge into the sea as the most appropriate method for disposal of ALPS treated water. It should be noted that the Basic Policy was not issued until a year after the IAEA report of April 2020 validating this approach. The Basic Policy reflected both the IAEA report and more than six years of concerted study and evaluation of potential methods to manage the residual wastes at the Fukushima Daiichi nuclear power station.

Discharge into the sea is commonly practised at nuclear facilities around the world, many of which discharge more radioactive nuclides than would be discharged from the Fukushima Daiichi nuclear power station. Moreover, this is the method that enables monitoring of its potential effects on humans and the environment to be conducted most accurately, consistent with the safe and responsible management of any potential radiological risks to humans and the environment in accordance with the IAEA safety standards.

Upon announcement of the Government's Basic Policy, the IAEA Director General, Rafael Mariano Grossi, stated in April 2021 that "Japan's chosen water disposal method is both technically feasible and in line with international practice".⁷ (Earlier this month, Mr. Grossi reaffirmed the IAEA 2021 conclusion when he answered "No" in an interview with CNN on 7 July 2023 when he was asked if there were better alternatives.)⁸

It is against this background that Japan requested IAEA to conduct a safety review of the ALPS treated water, and IAEA agreed in July 2021 to review the planned discharge against all relevant international safety standards in accordance with the mandate of IAEA provided for in its statute. The Government of Japan has never tried to limit the scope of the mandate of the IAEA task force, nor has IAEA ever expressed concern about the scope of the items subject to the review.

Over the period of the two-year review, Japan, as a responsible IAEA member State, took all relevant measures required under the Agency's rigorous, independent review, which included five IAEA review missions, and it supplied all relevant information to IAEA as requested. IAEA released six progress reports prior to the comprehensive report, all of which are publicly available.

The IAEA review continued while Japan's domestic regulatory processes were ongoing, and the Government of Japan repeatedly emphasized during the course of the review that it would carefully consider IAEA findings and observations. In fact, the implementation plan of the Tokyo Electric Power Company (TEPCO) and the radiological environmental impact assessment report, while under review by the Nuclear Regulation Authority (NRA) of Japan, were modified several times in order to incorporate IAEA findings and observations into the discharge plan.

2. Key conclusions of the IAEA comprehensive report

IAEA has authority under its statute to develop and apply international safety standards. Based on this authority, IAEA reviewed the elements of the discharge plan against all relevant IAEA international safety standards. These elements include

⁶ Basic Policy on Handling of ALPS Treated Water at the Tokyo Electric Power Company Holdings' Fukushima Daiichi Nuclear Power Station, available at https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/bp_alps.pdf.

⁷ See <https://www.iaea.org/newscenter/pressreleases/iaea-ready-to-support-japan-on-fukushima-water-disposal-director-general-grossi-says>.

⁸ See <https://www.cnn.com/2023/07/06/asia/japan-fukushima-water-iaea-chief-interview-intl-hnk/index.html>.

characterization of radionuclides in the treated water, potential impacts on the people and the environment, and involvement of interested parties.

In addition to the overall conclusions of the review as described in the chapeau part of section 2 above, IAEA reached the following conclusions on specific elements:

(a) Characterization of radionuclides in the treated water

Japan is committed to ensure that the ALPS treated water is discharged only after it is confirmed through pre-discharge monitoring (source monitoring) that the water meets regulatory standards. In this respect, the relevant IAEA safety standards provide that “a pre-operational analysis should be carried out to identify the inventories of radionuclides that would result in discharges”. In order to meet this requirement, TEPCO identified the source term of 29 radionuclides and tritium, which could potentially be present in the water before ALPS treatment. This determination was subsequently approved by NRA.

IAEA in its comprehensive report concluded that “TEPCO has developed an appropriately conservative characterization of the source” and that “the approach and activities undertaken by TEPCO and NRA are consistent with the relevant international safety standards” (comprehensive report, pp. 54 and 58). IAEA described the TEPCO source term as “sufficiently conservative, yet realistic”, with all relevant radionuclides included. IAEA further noted that many radionuclides included in the source term will never be found in ALPS treated water and that only 10 radionuclides can be routinely detected in samples of ALPS treated water (ibid., pp. 58 and 59).

Furthermore, samples of the ALPS treated water have been analysed through the inter-laboratory comparison conducted under the scope of the IAEA review. The IAEA report issued on 31 May this year⁹ concluded that neither IAEA nor the participating third-party laboratories detected any additional radionuclides beyond what is included in the source term and that TEPCO has demonstrated that they have a sustainable and robust analytical system in place. These findings are presented again in the IAEA comprehensive report (comprehensive report, pp. 107 and 108).

As IAEA noted in its comprehensive report, every batch of water to be discharged is analysed for all radionuclides in the source term prior to the discharge (comprehensive report, p. 57). TEPCO, with oversight and involvement by NRA and IAEA (ibid., pp. 86–90), will assure that radionuclides have been removed and will not discharge any water which it finds to be present at unsafe levels during its pre-discharge monitoring (source monitoring).

The claim in [SPLOS/33/14](#) that the radioactivity concentration of the radioactive nuclides in nearly 70 per cent of the ALPS treated water exceeds discharge limits has nothing to do with the effectiveness of ALPS itself or the ALPS treated water that will be discharged. Such a claim is extremely misleading, as it confuses the water currently undergoing treatment with the water ready for discharge after completion of the treatment. Seventy per cent of the water stored in tanks has yet to meet the regulatory standards for discharge because Japan initially prioritized the treatment in terms of swiftly reducing the radiation to the level that poses no risk of radiation exposure to the general public outside of the Fukushima Daiichi nuclear power station rather than to the level that meets regulatory standards for discharge. However, and most significantly, since 2019 the ALPS treatment process has been

⁹ IAEA, *First Interlaboratory Comparison on the Determination of Radionuclides in ALPS Treated Water*, available at https://www.iaea.org/sites/default/files/first_interlaboratory_comparison_on_the_determination_of_radionuclides_in_alps_treated_water.pdf.

focused on purifying the stored water below the regulatory standards for discharge and has fulfilled its objectives in a scientifically proven manner.

(b) Potential impacts on the people and the environment

Japan has always taken, and will continue to take, account of and has acted to protect public health and the global marine environment. The radiological environmental impact assessment conducted by TEPCO takes into account all relevant actors, including ocean currents, bioaccumulation and transboundary effects. The radiological environmental impact assessment was thoroughly reviewed by NRA and IAEA, and it incorporates their observations and comments.

The IAEA comprehensive report concluded that the radiological environmental impact assessment is compliant with international safety standards. More specifically, IAEA found that the radiation dose to the public will be more than 1,000 times lower than the dose constraint imposed by NRA and that the radiation dose rates to marine biota are more than a million times lower than the reference level established by the International Commission on Radiological Protection (comprehensive report, pp. 40, 79 and 84).

Regarding transboundary effects, IAEA found that “the results of the radiological environmental impact assessment show that the estimated dose to populations in neighbouring countries will be negligible” (comprehensive report, p. 28) and “activity concentrations in international waters will not be influenced by the discharge of ALPS treated water into the sea and the transboundary impacts are therefore negligible” (ibid., p. 80). IAEA concluded that the approach taken for the assessment of the radiological impact of accumulation of radionuclides in seabed sediments “ensures that the resulting annual doses over the period of the planned discharge are not underestimated” (ibid., p. 84).

The statement in [SPLOS/33/14](#) that “the radioactive nuclides contained in that water will spread to maritime areas around the world” is false because the levels of nuclides from the discharge will be so low as to be undetectable, and will be orders of magnitude below background levels in the sea itself. The concentration level of tritium in the discharged water will quickly decrease to less than 1,500 becquerel/litre (Bq/L) around the outlet before it disperses into the surrounding area, and will be much lower than the World Health Organization drinking water guideline (10,000 Bq/L). Moreover, the concentration level of tritium in seawater outside the 2–3-km radius around the power station would become so low as to make it impossible to distinguish from the current concentration level in the surrounding sea area (0.1–1 Bq/L). The simulation also evaluates the concentration level of tritium at the boundary of a wide sea area around the power station (490 km north-south by 270 km east-west), and it demonstrates that the highest figure of annual average concentration at the boundary within the area is far below one thousandth (0.00026 Bq/L) of the natural background level (approximately 0.1–1 Bq/L). The concentration level outside the boundary is expected to be even lower due to further diffusion. The concentration level of other radioactive material will show the same behaviour.

All these details show that the impact on humans and the environment will be negligible. In particular, IAEA has found that “the [radiological environmental impact assessment] produced by TEPCO and reviewed by NRA has demonstrated that the dose to representative persons in neighbouring countries will be undetectable and negligible” (comprehensive report, p. 25). IAEA also found that “TEPCO’s marine dispersion models predict very insignificant concentrations of tritium and other radionuclides that will be undetectable or indistinguishable from background levels at the boundary of the modelling simulation area” (ibid., p. 28). In fact, the

radiological impact of the discharge of ALPS treated water into the sea on one representative person in annual terms is below 0.1 per cent of the radiation received on a flight between Tokyo and New York.

(c) Involvement of interested parties

Japan has systematically tried to address the concerns expressed by third States, including through bilateral exchanges of information, and through frequent briefings to broad groups of embassy officials in Tokyo. For example, the Government of Japan has organized more than 120 briefing sessions for diplomatic missions in Tokyo since 2011, including 15 sessions since April 2021, and has held explanatory sessions at international conferences including those organized by IAEA, as well as providing relevant data and information online.

In addition, the Government of Japan has provided individual briefing sessions to countries and regions which have expressed particularly keen interest, and currently maintains dialogues with interested parties such as the Republic of Korea and Pacific Island countries.

IAEA positively noted these efforts by Japan, and has concluded in its comprehensive report that Japan provided information to and engaged in consultations with the interested parties, including both international and domestic ones, and conducted significant outreach activities to ensure transparency (comprehensive report, p. 97).

Prior to the issuance of document [SPLOS/33/14](#) on 16 June 2023, Japan responded to a large number of questions contained in two joint China-Russia questionnaires. Japan's responses amounted to more than 70 pages. Furthermore, Japan repeatedly proposed individual briefing sessions to Chinese nuclear experts as well as government officials with a view to engaging in scientific discussion and facilitating China's understanding of the matter. These offers are in line with Japan's commitment to ensuring maximum transparency with regard to the safety of the planned discharge. Japan made the same offers to other interested States and regions such as the Republic of Korea and Pacific Island countries, and a series of meetings took place with their experts, which proved very effective in deepening mutual understanding.

It is regrettable that China had not responded until recently to our long-standing proposal and that such meetings with its experts have yet to be realized. Meanwhile, China continues to distort facts and make one-sided claims that have no scientific basis while ignoring the explanations that Japan has continuously provided. Japan remains ready to respond to China's concerns in a bilateral dialogue and hopes that China will respond to this offer rather than engaging in a campaign of disinformation about the discharge of ALPS treated water, while ignoring the authoritative conclusions of IAEA.

(d) Monitoring

Japan will conduct both pre-discharge monitoring (source monitoring) and environmental monitoring. IAEA concluded that "the activities and approach taken by TEPCO and NRA are consistent with the relevant international safety standards", acknowledging that there are "clearly defined plans" in place for both kinds of monitoring (comprehensive report, p. 94). The comprehensive report also states that "IAEA is committed to engaging with Japan on the discharge of ALPS treated water not only before, but also during, and after the treated water discharges occur" and it will continue its review and engagement in Japan's monitoring activities (*ibid.*, pp. v and vi).

III. Conclusion

Japan has met the relevant standards regarding prevention, reduction and control of pollution in the marine environment, and it reiterates that it will take every possible measure to ensure the safety of the discharge and that it will not allow any discharge that would harm people or the marine environment.

Japan has acted, and will continue to act, in strict compliance with all national and international requirements, and will carry out the discharge of ALPS treated water in a transparent manner, in conjunction with IAEA. Japan will make monitoring information public in a transparent and prompt manner. Should a problem be detected during this monitoring process such as detection of unusual value of concentration of the radioactive materials, Japan will take appropriate measures, including immediate suspension of the discharge, as stipulated in the discharge plan reviewed by IAEA.

The Government of Japan assures that, as IAEA has determined in its comprehensive report, every precaution has been taken, and will be taken, to ensure that the discharge of ALPS treated water from the Fukushima Daiichi nuclear power station will bring no harm to humans or to the environment, including the marine environment.
