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Communication dated 13 April 2021 from the Permanent Mission of Japan to the Agency

1. The Secretariat has received a communication dated 13 April 2021 from the Permanent Mission of Japan to the Agency, enclosing Japan's Basic Policy on the handling of Advanced Liquid Processing System (ALPS) treated water at the Fukushima Daiichi Nuclear Power Plant Station and an explanatory document.

2. As requested by the Permanent Mission, the communication together with the Basic Policy and explanatory document are circulated herewith for the information of Member States.

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NOTE VERBALE

The Permanent Mission of Japan to the International Organizations in Vienna presents its compliments to the Secretariat of the International Atomic Energy Agency and has the honour to inform the latter that the Government of Japan announced the Basic Policy on the handling of the ALPS (Advanced Liquid Processing System) treated water at the Fukushima Daiichi Nuclear Power Station on 13 April 2021, based on more than six years of comprehensive study by experts, reviews by the IAEA, and engagement with parties concerned.

In this regard, the Permanent Mission of Japan encloses with this Note the text of the Basic Policy and an explanatory document and requests the Secretariat of the IAEA to circulate this Note with the enclosed documents to all Member States as an information circular.

The Permanent Mission of Japan to the International Organizations in Vienna avails itself of this opportunity to renew to the International Atomic Energy Agency the assurances of its highest consideration.

PERMANENT MISSION OF JAPAN TO THE INTERNATIONAL ORGANIZATIONS VIENNA
国際機関日本政府代表部 ウィーン

13 April 2021
Vienna
To the Secretariat of the
International Atomic Energy Agency

Provisional translation

Basic Policy on handling of ALPS treated water at the Tokyo Electric Power Company Holdings' Fukushima Daiichi Nuclear Power Station

13 April, 2021

The Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning issues

1. Achieving both reconstruction and decommissioning

(1) Basic premise

1) March 2021 marked ten years since the accident at Tokyo Electric Power Company Holdings' Fukushima Daiichi Nuclear Power Station (Fukushima Daiichi NPS). For the years since the accident, the areas where the evacuation order have been lifted are gradually enlarging. Even in the areas where originally designated as Difficult-to-Return-Zones immediately after the accident, early signs of reconstruction are being observed in specific areas where intensive decontamination work was conducted to create base spots for recovery and reconstruction. Efforts of the people in the affected areas are starting to bear fruit, as the amount of exports of Fukushima's agricultural products in FY 2019 recovered to hit record high and to exceed that of before the accident. On the other hand, rumor-based adverse impacts on reputation (adverse impacts on reputation) remain on industries, especially in the agriculture, forestry, fishery and tourism industries. Being fully mindful of the current situation, the Government of Japan will continue to take charge in prioritizing the revitalization and reconstruction from the nuclear disaster in a steady and stepwise manner.

2) Steady progress in decommissioning, and management of contaminated water and treated water are essential for reconstruction and revitalization from the nuclear disaster. However, reconstruction efforts should not be stagnated due to adverse impacts on reputation that may result from hasty decommissioning. In order to achieve both reconstruction and decommissioning, Tokyo Electric Power Company Holdings (TEPCO) has been making continuous systematic decommissioning efforts to reduce the risks associated with radioactive materials, to protect locals, workers and the surrounding environment.

3) In the process of decommissioning work, TEPCO not only complies with related laws and regulations, such as Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (the Reactors Regulation Act) but also takes measures to reduce risks associated with radioactive material to the minimum, based on the ALARA principle[1] (As Low As Reasonably Achievable principle) recommended by the International Commission for Radiological Protection (ICRP).

4) As part of systematic risk reduction, TEPCO has been making efforts to reduce the risks associated with the continuously generated contaminated water at the Fukushima Daiichi NPS. Measures were taken to reduce the amount of contaminated water using multi-layered approaches including the construction

[1] The ALARA (As Low As Reasonably Achievable) principle is the principle recommended by the ICRP, that every exposure dose should be kept as reasonably low as possible, considering social and economic factors.

and operation of sub-drains[2] and the land-side impermeable walls (frozen soil walls). The water is stored in tanks at the site of the Fukushima Daiichi NPS after radioactive materials are removed from the contaminated water to the maximum extent using the Multi-nuclides Removal Equipment (ALPS[3]) and other facilities. The water is being stored in the tanks, as the handling of the water needed to be examined while taking into consideration any adverse impacts on reputation which may arise from the fact that the water was exposed to the substances emitting high radiation, such as fuel debris.

5) Meanwhile, the decommissioning work including developing concrete plans or fuel debris retrieval has been progressing steadily, while maintaining and managing the stable state of the Fukushima Daiichi NPS. Going forward, essential and most challenging decommissioning measures, such as removing fuels from the spent fuel pools of Unit 1 and 2 and retrieving fuel debris will start. To advance this work safely and steadily, the site area of Fukushima Daiichi NPS must be utilized in the most effective way. The current situation where the tanks and their piping facilities, that store the water treated from the contaminated water generated every day, occupy increasingly large areas of the site can be a critical bottleneck in future decommissioning work, unless their placement is reviewed.

6) Regarding the tanks installed on site of Fukushima Daiichi NPS, it has been pointed out that the existence of the tanks themselves is a cause of the adverse impacts on reputation, and that the risk of leakage and other risks due to deterioration or disaster may increase along with long-term storage. For instance, the earthquake which occurred in offshore Fukushima Prefecture on 13 February, 2021 (maximum seismic intensity of 6.0 Upper on the Japanese scale) caused a shift in the position of some tanks at the site, and measures such as replacement of some piping were needed. While the earthquake did not cause any impact outside of the site as neither collapse of the tanks nor large-scale leakage occurred, there was some uneasiness among the public due to a degree of insufficiencies regarding the way of information was provided to local residents and the media. Preparing for the future disasters and others, adequate safety measures for tanks and proper provision of information are required.

7) Moreover, building additional tanks in surrounding areas outside the Fukushima Daiichi NPS for additional storage would require more land and result in an additional burden on the people who are working diligently toward reconstruction. Taking this situation into account, municipalities which accommodate the Fukushima Daiichi NPS and others have voiced opinions that the Government should not defer resolving this fundamental problem of the increasing volume of

[2] The wells which pump up the groundwater from the vicinity of the buildings of Fukushima Daiichi NPS. The groundwater has been discharged after purification.

[3] ALPS is an abbreviation of "Advanced Liquid Processing System"

the water stored in tanks and that the Government should take responsibility for making prompt decisions on appropriate measures.

8) Considering the current situation and carrying out the important responsibilities of proceeding with decommissioning, and management of contaminated water and treated water in a safe and steady manner under the principle of achieving both reconstruction and decommissioning, the Government should rapidly determine the policy of handling of the water stored in tanks.

9) In deciding the policy of handling of the water, it is necessary to fully address the concerns of people, such as local residents who made efforts toward dispelling the adverse impacts on reputation, in order not to make them suffer again.

10) On 16 March 2021, Nuclear Regulatory Authority (NRA) disclosed the summary of the incidents of the partial loss of function to nuclear material protection equipment at TEPCO's Kashiwazaki-Kariwa Nuclear Power Station. In light of the occurrence of such incidents as well as the criticism caused after the insufficient provision of information after recent earthquakes, the Government and TEPCO should accept sincerely that there is increasing concern being paid to them more than ever.

11) TEPCO is also required to take measures that fully take into account the principle of "achieving both reconstruction and decommissioning." In the upcoming projects of decommissioning, management of contaminated water and treated water, TEPCO needs to continue to make their utmost efforts to recover public confidence. TEPCO needs to take all measures such as publishing objective information on the situation inside the site and surrounding environment and others in a highly transparent manner, in order to dispel anxiety of local people as well as interested parties inside and outside of Japan.

(2) Background: towards issuing basic policy

1) For more than six years, the handling of the water stored in tanks has been studied in a comprehensive way by experts in the Tritiated Water Task Force and Subcommittee on Handling of ALPS treated water (ALPS subcommittee), examining both scientific and social issues, including an issue of adverse impacts on reputation.

2) The report published by the ALPS subcommittee in February, 2020, assessed the five options which were regarded as technically feasible by the Tritiated Water Task Force (geosphere injection, discharge into the sea, vapor release, hydrogen release and underground burial), from the viewpoint of technology, regulations, timeline and the other factors. The subcommittee concluded: i) for geosphere injection, appropriate land needs to be identified and monitoring method is yet to be established; ii) for hydrogen release, the technologies such as preconditioning

and those that would allow for increase of scale have not been established; and iii) for underground burial, water including tritium[4] will be vaporized at the time of solidification and it is difficult to predict the necessary period for establishing regulations and securing the necessary land.

3) The subcommittee report also assessed an option of long-term storage. The report concluded that, regarding the storage capacity inside the site of Fukushima Daiichi NPS, additional space for installing more tanks than currently planned is limited, as a result of having assessed the efforts of expanding the capacity of existing tanks and improving the efficiency of placement of tanks. It was also concluded that expanding the size of tanks would have no merit as the marginal gain of capacity relative to surface area is limited, because longer period would be needed for installation and leak inspection, and also in the event of damage, the amount of leakage would be very large. In addition, the report concluded that the storage at outside of the site of Fukushima Daiichi NPS would not be feasible, as it would be necessary to obtain business permission as radioactive waste storage facilities as well as to obtain understanding of the municipalities, which will take a considerable amount of time. For inside and outside the site, due to the limitation in installing more tanks than currently planned, the subcommittee report concluded that the existing site area of Fukushima Daiichi NPS must be utilized effectively, in order to proceed the decommissioning safely and steadily.

4) Based on these assessments, the report recommended the options of handling of the water which are processed by devices such as ALPS so that the radioactive materials other than tritium will surely satisfy the regulatory standards for safety[5] (ALPS treated water). In the report, both vapor release and discharge into the sea as feasible options from the viewpoints of regulation and technology, and discharge into the sea is the more reliable method of implementation. It is also pointed out that regardless of which option is selected, adequate responses against possible reputational damage must be prepared.

5) The discussion at the ALPS subcommittee was based on the premise that the water stored in the tanks, which does not satisfy the regulatory standards for discharge into the environment, will be re-purified by ALPS or other equipment until the

[4] Tritium is a radioactive material relative of hydrogen (radioisotope) that emits weak radiation. Tritium exists in nature in rain water, sea water, tap water and other materials. It is difficult to remove tritium through ALPS. Tritium is discharged from nuclear facilities in each operating country. Though there are some facilities from which the annual amount of tritium is discharged exceeds the total amount of tritium stored in Fukushima Daiichi NPS, no examples of impact attributable to tritium have been commonly seen among nuclear power facilities.

[5] For radioactive materials other than tritium, the concentration will be below the regulatory standards for discharge of liquid radioactive waste to the environment stipulated in the Ordinance based on the Reactors Regulation Act, before dilution.

[6] TEPCO will implement as part of the compensation for the accident at the Fukushima Daiichi Nuclear Power Station.

level of radionuclides other than tritium satisfies the regulatory standards for safety, as a precondition of the examination.

6) The International Atomic Energy Agency (IAEA) acknowledged the conclusion of the report as "based on scientific and technical basis."

7) The Government has periodically shared the status of the findings of the ALPS subcommittee with local municipalities and relevant people in agricultural, forestry and fishery industries and various other parties concerned and exchanged opinions. Hundreds of these meetings have been held since the publication of the ALPS subcommittee's report. In addition, after the publication of the report, seven "Meetings for Hearing Opinions" were held to hear the opinions of parties concerned including distribution and retail industries as well as local municipalities (twenty nine entities and forty three people), with the attendance of vice ministers of related ministries. The need for the thorough dissemination of information and preventive measures against adverse impacts on reputation arising from the handling of the water were expressed from many parties at these meetings. Opposition to the discharge into the environment was expressed by the production association of agricultural, forestry and fishery industries as they feared that the reputational damage could not be prevented. Local municipalities stated that the handling of the water should be the responsibility of the Government.

8) Opinions from the general public have been solicited for more than three months and more than four thousand opinions have been received. Many argued the safety of the discharge into the environment, and expressed concerns related to potential adverse impacts on reputation associated with the discharge into the environment. Others stated opinions that the discharge should be implemented only after the safety is widely known both domestically and internationally.

9) The Government attaches great importance to the ALPS subcommittee report and diverse opinions the Government has received, and hereby sets the basic policy on the handling of the ALPS treated water at the Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning Issues.

10) TEPCO, the company responsible for conducting the discharge, must maintain strict compliance with the laws and regulations including the nuclear safety regulations, based on international standards, set forth by the Nuclear Regulatory Authority (NRA), an independent body that makes decisions based on the latest scientific and technical information.

11) The Government requests TEPCO to make plans that surely reflect this basic policy to submit to the NRA for its approval, towards the actual discharge.

2. The handling of the ALPS treated water

(1) Method of the handling of the ALPS treated water

1) In order to safely and steadily proceed with decommissioning and management of contaminated water and treated water at Fukushima Daiichi NPS, based on the ALPS subcommittee report and opinions received from parties concerned, the ALPS treated water will be discharged on the condition that full compliance with the laws and regulations is observed, and measures to minimize adverse impacts on reputation are thoroughly implemented.

2) As for the method of discharge, based on achieving certain and consistent compliance with the regulatory standards set forth based on the recommendations of the ICRP which are broadly referred in radiation protection standards in each country, and considering the successful precedence in Japan, as well as in conducting secure and sound monitoring and others, the Government selects discharge into the sea. Hereafter, TEPCO will need to obtain the necessary approval from NRA to the detailed plan as well as to the necessary facilities constructed in accordance with the approved plan and others details, prior to the actual implementation of the discharge into the sea. TEPCO will conduct the discharge into the sea subject to the above-mentioned approval of NRA.

3) The IAEA stated that controlled discharges into the sea is "routinely used by operating nuclear power plants and fuel cycle facilities in Japan and worldwide" and is "technically feasible and would allow the timeline objective to be achieved" in its report of “IAEA Follow-up Review of Progress Made on Management of ALPS Treated Water and the Report of the Subcommittee on Handling of ALPS treated water at TEPCO’s Fukushima Daiichi NPS”, published in April 2020.

(2) Direction of measures regarding discharge into the sea

1) TEPCO must comply with the regulatory standards stipulated in the Reactors Regulation Act which has been set based on the recommendations of ICRP for securing safety of public and surrounding environment from tritium and other radionuclides. By taking such measures, the safety of the public, environment, agricultural, forestry and fishery products and others in the surrounding areas will be ensured as it was always been.

2) For the implementation of discharge into the sea, a method of discharge that minimizes the adverse impacts on reputation (including monitoring with objectivity and transparency) should be ensured, in addition to complying with the laws and regulations related to safety.

3) In addition, all measures should be taken so as to gain national and international understanding regarding the discharge.

4) To respond to any adverse impacts on reputation despite these preventive measures, the Government will provide support to various industries such as the fisheries industry in Fukushima prefecture, its neighboring prefectures and others. The support includes the setting up and developing sales channels both in local areas and areas of major consumption including overseas.

5) The government requests that TEPCO implement 2), 3) and 4) above to the maximum extent, together with the Government. The Government also requests that TEPCO respond swiftly with compensation[6] that will provide a safety net in the event that reputational damage occurs.

(3) Relationship with the international community

1) Japan, as a responsible member of the international community, has been proactively providing information to countries with interest and the international community including international organizations in a highly transparent manner, through providing related information to the IAEA, briefing sessions for diplomatic missions in Tokyo and other means. The Government will continue these efforts.

2) For ensuring safety of public and surrounding environment, the discharge will be implemented on the premise that TEPCO complies with the regulatory standards set based on the recommendations of ICRP, and implementation of the discharge will be in line with international practice.

3. Specific method of discharge of the ALPS treated water into the sea

(1) Basic directions

1) Decommissioning, management of contaminated water and treated water are continuous efforts to reduce risks and protect the people and the environment from the risk of radioactive material. The water in tanks should be controlled as radioactive materials, and best efforts must be made, based on the ALARA principle, so that the associated risk will not be proliferated, but minimized.

2) In this regard, it should be noted that the associated risk would increase and proliferate if the water is stored for longer time with exceeding its regulatory standards for discharge of radioactive materials into the environment, and with increasing volume, or is transported to other regions.

[6] TEPCO will implement as part of the compensation for the accident at the Fukushima Daiichi Nuclear Power Station.

3) In addition, when the water which satisfies the regulatory standards by purification and dilution is transported outside of the site and then discharged under the current regulation,, necessary control measures must be maintained prior to the actual discharge. Furthermore, the Government and TEPCO would need to coordinate with municipalities and other varied parties concerned for transportation, storage and discharge, which would require significant time.

4) Based on the issues above, discharge of the ALPS treated water into the sea will be implemented at Fukushima Daiichi NPS, on the premise to make best efforts to minimize the risks by taking measures such as purification and dilution based on the ALARA principle, under strict control.

5) The Government requires that TEPCO will proceed with concrete preparations such as the construction of facilities for discharge and other works, to start discharge of ALPS treated water into the sea approximately after two years.

(2) A method of discharge that minimizes adverse impacts on reputation

1) Discharge of the ALPS treated water into the sea is conducted after sufficiently diluting the ALPS treated water. Prior to the discharge, i) the concentration of tritium of the ALPS treated water and ii) the water is purified until the level of radioactive materials other than tritium satisfies the regulatory standards for safety, will be confirmed and disclosed, engaging with third-party experts who have expertise in analysis of the radioactive materials.

2) To allay the concerns of the consumers, the target concentration of tritium should be the same as the operational target (less than 1,500Bq/Liter-water[7]) for the currently implemented discharge of water pumped up via sub-drains, at Fukushima Daiichi NPS.

3) To achieve this target concentration of tritium, prior to the discharge into the sea, the ALPS treated water needs to be sufficiently diluted (more than 100 times[8]) by sea water. Radioactive materials other than tritium will also be significantly diluted with this dilution[9].

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[7] That is 1/40 of the regulatory standard value for tritium and around 1/7 of the World Health Organization's (WHO) Guidelines for drinking water quality value. The regulatory standard value is the limit value of concentration of a radionuclide in liquid radioactive waste discharge into the environment and is stipulated in the Ordinance based on the Reactors Regulation Act. If liquid radioactive waste contains multiple radionuclides, sum of the ratios of concentration of each radionuclide other than tritium, relative to its regulatory standard is less than 1.

[8] Concentration of tritium in the water stored in tanks is around 0.15 million Bq/L to 2.5 million Bq/L (Weighed average 0.73 Bq/L). To achieve the tritium concentration of 1,500 Bq/L, the ALPS treated water will be diluted with the rate of around 100 to 1,700 (weighted average of 500 fold dilution).

[9] By Diluting the ALPS treated water, more than 100 times, the sum of ratios for other than tritium will be less than 0.01.

4) The total annual amount of tritium to be discharged will be at a level below the operational target value[10] for tritium discharge of the Fukushima Daiichi NPS before the accident (22 trillion Bq/year). The amount will be reviewed periodically. This operational value for tritium discharge is within the range of the amount of discharge from each nuclear power station inside and outside the county.

5) In addition to these measures, the Government and TEPCO will strengthen and enhance monitoring before and after the discharge by activities including newly introduced monitoring of tritium at fishing ground, swimming beaches and other areas. For these monitoring activities, objectivity and transparency will be ensured by such activities as i) securing credibility of analytical capability by inter-laboratories comparison project with the cooperation of IAEA, ii) having participation and observation by agriculture, forestry, fisheries, local municipalities and other businesses to the TEPCO's monitoring activities such as sampling and analysis, and iii) providing confirmation and advice to sea area monitoring activities by a newly established experts committee.

6) The discharge into the sea will be conducted in small amount at the initial phase, while confirming the impacts on the surrounding environment. Discharge will be securely stopped until the safety of the discharge is confirmed, if there is any malfunction of dilution facilities and other equipment due to a power or other failure, or if a radiation monitor detects an irregular value.

7) Taking into account domestic and international concerns about the potential impact on the environment of discharge into the sea, the Government and TEPCO have been conducting analysis[11] from various perspectives on the environmental impact of the discharge. In the actual discharge, TEPCO strictly complies with the national regulatory standards set based on recommendations of ICRP. Furthermore, considering relevant international law and international practice, measures shall be taken to assess the potential impact on the marine environment, and to ascertain the environmental situation through continuous monitoring stated above after discharge. The Government will seek to foster understanding both the general public and international community through ensuring a high degree of transparency by availing the information regarding the impact on the environment to the public in a timely manner.

[10] Target value at the time of operation which is set for each nuclear power station and is significantly lower the regulatory standard.

[11] The result of the radiation impact assessment using the method by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) shows that the radiation impact associated with the discharge of ALPS treated water is extremely low compared to the natural radiation impact in Japan (2.1mSv/year).

4. Measures to respond to adverse impacts on reputation

(1) Basic directions

1) On undertaking the discharge of the ALPS treated water into the sea, the operator, TEPCO, has the responsibility to prevent both adverse impacts on the reputation and reputational damage to the fullest extent. TEPCO in therefore required to take every effort to foster the understanding of the general public and the international community, as well as to conduct measures for the production, processing, distribution, and consumption phases of affected industries to minimize adverse impacts on reputation. Furthermore, if reputational damage occurs, the Government will require TEPCO to provide rapid compensation in a form that functions as a safety net.

2) Moreover, the Mid-and-Long Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station revised by the Inter-Ministerial Council for Contaminated Water and Decommissioning Issues in December 2019 states the principle that the Government should take the initiative in promoting the efforts to implement decommissioning safely and steadily. Following this principle and fulfilling the responsibilities to take efforts against adverse impacts on reputation which might arise along with the decision of the basic policy, the Government will work on taking necessary preventive actions to minimize adverse impacts on reputation and to accomplish a full-scale reconstruction of industries.

(2) Increase public understanding to minimize adverse impacts on reputation

1) With the strong determination to prevent any adverse impacts on reputation, The government will strengthen and enhance measures to both inside and outside Japan through the framework of "the Task Force on the Nuclear Hazard's Influence Including the Negative Reputation Impact," (Taskforse on Measures for Negative reputation) " and others. Through efforts such as disseminating intelligible information based on scientific evidence and interactive communication, the Government will do its utmost to increase understanding of domestic consumers and business entities who may be affected by adverse impacts on reputation.

2) Moreover, the measures should be taken to allay the concerns of business people which might be affected by the adverse impact on reputation by the discharge into the sea, and not to impair the consumer trust in safety which has been built by strenuous efforts so far. In this regard, the Government will: i) conduct and publish the result of radioactivity monitoring of fishery products and disseminate information based on scientific evidence; ii) gain the understanding of relevant parties in the production, processing, distribution, and consumption phases related to the industries regarding the safety and other information of the ALPS treated

water; and iii) fully explain to the public concerning the countermeasures for the possible adverse impacts on reputation. In addition, the Government will support measures to dispel the adverse impact on reputation conducted by Fukushima Prefecture and its municipalities with their design.

3) The Government will take every opportunity to disseminate information to the international community, in order to prevent the introduction of import restrictions which are not based on scientific evidence, by such importing countries. In doing so, the Government will present data and information that scientifically demonstrate the discharge is conducted in accordance with international practices while ensuring safety. Furthermore, the Government will conduct measures to deepen the understanding of consumers inside and outside Japan by utilizing various media such as newspaper and the internet. The Government will also cooperate with international organizations such as IAEA and OECD/Nuclear Energy Agency, and fully disclose a variety of data obtained through daily monitoring and other activities to relevant parties abroad.

(3) Measures for production, processing, distribution and consumption phases to minimize adverse impacts on reputation

1) Fishery in Fukushima prefecture has been under the trial fishing operation status, while from April 2021, the operation will be expanded in a phased manner, and the transition to a new phase is underway. However, the fish landing amounts for coastal fisheries and offshore trawl fisheries is only 17% (2020) of what it was before the earthquake disaster. Against such backdrop, people involved in fisheries industry have expressed concerns about possible additional reputational damage which could occur with the handling of the ALPS treated water. The Government will take thorough measures for each stage of production, processing, distribution and consumption in order to ensure that the fisheries industry will achieve its full-scale recovery.

2) To increase the landing amounts, the Government will extend the assistance for Project to Support Reconstruction of Fishing Industry, and continue to support the maintenance of shared-use facilities such as cargo handling areas. In addition, to solve local distribution bottlenecks, the Government is supporting a model project which cultivates sales channels and equipment installation by local brokerage and processing businesses. Furthermore, the Fukushima Soso Reconstruction Corporation, a public interest incorporated association, will begin to support for fishery-related brokerage, processing and other businesses in fifteen local cities/towns/villages[12] in the Hamadori and the other areas. Toward the resolution

[12] Iwaki City, Soma City, Tamura City, Minamisoma City, Kawamata Town, Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Shinchi Town, Iitate Village

of structural issue in the distribution sector in Fukushima as well as other prefectures, measures will remain in place based on the result of distribution industry survey. To recover seafood sales, the Government will continue efforts to cultivate sales channels and the usage of Jo-ban products in both rural and major consumption areas.

3) As concerns were expressed to the possible reputational damage which could occur with the handling of the ALPS treated water on tourism, commerce, manufacturing industries, agriculture and forestry industries and other businesses, the government is taking measures to ensure full-scale reconstruction, including engaging in sales increase for visitors or encouraging move and settlement, accelerating the resumption of agricultural operations and sales promotion of agricultural and other products through the development of large scale.

4) In addition to the continuation of the above-mentioned measures, the following measures will be taken in order to respond to possible adverse impacts on reputation resulting from the discharge or the decision of the policy regarding the discharge of ALPS treated water into the sea, with the support from business community and other related entities;

   A) As noted above, the Government and TEPCO will take thorough measures to foster the understanding of the general public and the international community and TEPCO will safely and carefully implement the measures involved in the discharge, in order to minimize adverse impacts on reputation;

   B) If adverse impacts on reputation arises and affects industries such as fisheries in Fukushima and the other neighboring prefectures, or tourism, commerce and manufacturing industries, the Government will provide support in developing/cultivating both local and overseas sales channels in major areas of consumption and in implementing initiatives to attract more tourists, in order to minimize the impacts.

(4) Measures to respond to reputational damage in case of occurrence

1) If reputational damage is confirmed following the discharge of the ALPS treated water into the sea, even after taking every possible preventive measure, the Government will instruct TEPCO to provide speedy compensation, which functions as a safety net, in accordance with following:

   A) Based on the basic framework of compensation for reputational damage, including the necessity of rational and flexible response prescribed in the Interim Guidelines on Determination of the Scope of Nuclear Damage resulting from the Accident at the Tokyo Electric Power Company Fukushima Daiichi and Daini Nuclear Power Plants, published by the Dispute

Reconciliation Committee for Nuclear Damage Compensation (DRC), TEPCO must promptly and appropriately provide compensation, equivalent to the actual damage, without unifying the period of compensation, areas or types of businesses;

B) Before the discharge of ALPS treated water into the sea, TEPCO must explain the policy of compensation if occurs, and obtain the understanding of parties concerned who express concern related to reputational damage;

C) Regarding the provision of compensation, the burden of proof regarding the damage should not be placed on the injured parties one-sidedly, but rather, compensation is to be determined and provided rapidly by analyzing objective statistical data and making rational and generous assessments of the adverse impacts on reputation caused by the discharge of the ALPS treated water.

2) In the case that the reputational damage occurs after the discharge of the ALPS treated water into the sea, DRC will examine and deliberate on reputational damages, when necessary.

5. Further Steps for the future

1) Adverse impacts on reputation might arise in unexpected ways in the future. Therefore, the current activities through Task Force on Measures for Negative reputation will be strengthened / enlarged. The Government will also launch the public/private council "Ministerial meeting toward the realization of the basic policy on handling of ALPS treated water" to continuously and broadly review specific issues for fisheries and other parties concerned, along with the discharge of the water into the sea, and to examine the necessary measures. Through these activities, the Government will examine the necessity of the additional measures and implement the necessary measures in an agile manner.

2) With regard to the separation of tritium, ALPS subcommittee discussed that A) there are some technologies practically used in domestic and international nuclear facilities, while concentration of tritium for them is 10,000 times as high or higher, or the treatment throughput is tenths or lower, when compared to the ALPS-treated water at the Fukushima Daiichi NPS; and B) another issue is how to handle the water with high concentration and low concentration in each, after the separation of tritium.

3) ALPS subcommittee's report concluded that "… no technologies have been judged as being close to practical use at the Fukushima Daiichi NPS" and a very similar view has been published by the IAEA.

4) Based on the above circumstances, at the Fukushima Daiichi NPS, the discharge will be conducted with dilution. However, new technological trends will be

carefully and continuously monitored, and if a viable technology emerges, it will be implemented as rapidly as practicable.

5) TEPCO will continue its efforts to reduce the generation of contaminated water at Fukushima Daiichi NPS to the extent possible. TEPCO will also continue to decontaminate drainage channels to reduce the concentration of radioactive materials in the port of Fukushima Daiichi NPS, and to take other relevant measures to remove fish in the port.

6. Conclusion

1) It is necessary to steadily proceed with mid-and-long-term efforts toward decommissioning in order to ensure the return of evacuated residents to their homes with peace of mind, and to remove anxieties of the local communities and the national populace. No further postponement of establishing this Basic Policy is possible for the issue on the handling of the ALPS treated water.

2) The Government certainly recognizes that selecting the option to discharge ALPS treated water into the sea is a serious decision making, under strong concerns about adverse impacts on reputation. With the determination not to cause additional adverse impacts on reputation due to the discharge of the ALPS treated water into the sea, the Government will take every measures to respond to all issues that may arise.

3) Additionally, the Government will continue to discuss adequate measures to respond to adverse impacts on reputation with wide-ranging parties and review the issues constantly. Government will work to take measures to ensure that adverse impacts on reputation never becomes permanent.

4) It should be remembered that the adverse impacts on reputation have been gradually dispelled through strenuous efforts of many people including locals toward the reconstruction of their industries and businesses. If additional adverse impacts on reputation occur due to the discharge of the ALPS treated water into the sea, their efforts will come naught and they will be suffered greatly. Therefore, the Government will undertake measures to dispel the adverse impacts on reputation, while offering support for the people who might suffer from the adverse impacts on reputation and having strong determination not to stop the progress of industries and business toward reconstruction.

5) For the recovery from the nuclear accident, tenacious efforts with a mid-to-long term view are necessary. The Government will remain at the forefront of these efforts and utilize all available resources to advance every possible measures until the recovery is complete.

April 2021

Announcement of the Basic Policy on handling of the ALPS treated water at TEPCO's Fukushima Daiichi Nuclear Power Station (FDNPS)

- Based on more than six years of comprehensive study by experts, reviews by the IAEA, and engagement with parties concerned, the Government of Japan published **the Basic Policy** on handling of the ALPS (Advanced Liquid Processing System) treated water at FDNPS on 13 April 2021.
- Subject to the approval of the independent Nuclear Regulation Authority (NRA), TEPCO will conduct the discharge into the sea (envisaged to take place approximately after two years).

TEPCO's Fukushima Daiichi Nuclear Power Station

GOJ will engage to ensure safety of discharge, transparency, and accountability

1. Safety of the Discharge will be ensured

(1) **The water will be purified/re-purified and diluted to meet regulatory standards** (p2)

(2) **Potential impact on the environment has been assessed, and more will be done** (p3)

- Radiological impacts were assessed with UN-designed methodology and diffusion simulation.
- Additional measures based on international standards and practices will be taken. (To be published in due course.)

(3) **Monitoring projects will be strengthened and enhanced (e.g. sea water, fish)** (p3)

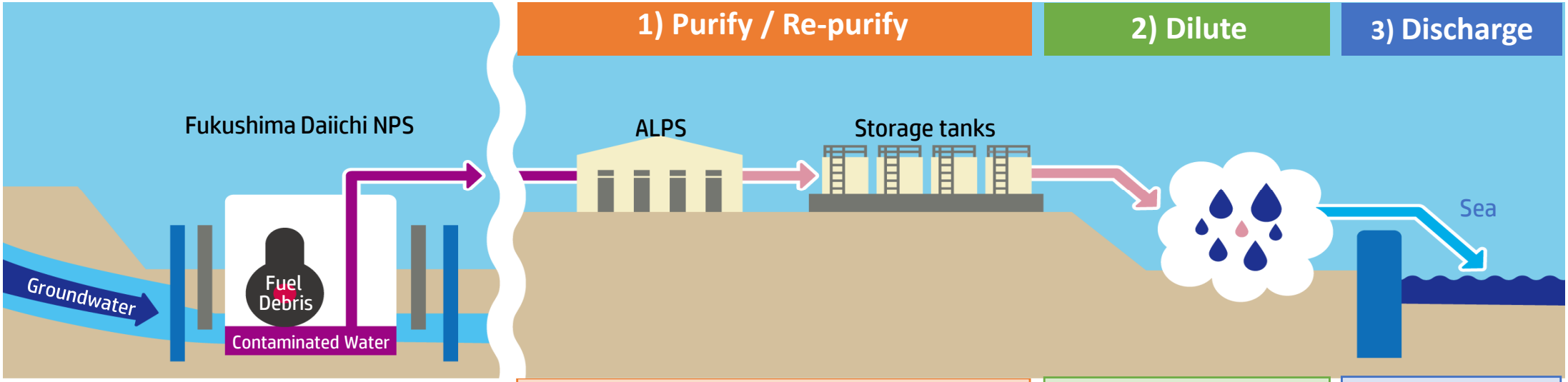
2. Transparency and Accountability will be maintained (p4)

- Information based on scientific evidence will be provided in a transparent manner
- Cooperation with the IAEA will be continued (e.g. review missions, monitoring projects)

1. Safety of discharge

(1) Three Step Approach to meet the regulatory standards for discharge

Japan's regulatory standards for discharge are set based on the recommendations of the International Commission for Radiological Protection (ICRP), keeping additional public radiation below 1mSv/year.



Contaminated Water is generated when groundwater touched the damaged reactors and debris.

Remove almost all kinds of nuclides other than tritium* to the maximum extent, and meet the national regulatory standards set based on the ICRP recommendations

ALPS Treated Water

Dilute more than **100 times** to make tritium to at the most 1/40th of the national regulatory standards **(1,500Bq/L)** **

Subject to the approval of NRA, discharge will be started (envisaged after two years) ***

*Carbon-14 also cannot be removed through purification process, but Carbon-14 contained in the water stored in tanks is far below the level of national regulatory standards (at the most 1/10 th of the standard). After dilution, the level of Carbon-14 will go down to at the most 1/1000th of the standards.

**Concentration of the nuclides other than tritium becomes negligible in purification/re-purification and dilution process.

*** Annual emission of tritium will be less than 22 trillion Bq/year.

1. Safety of discharge

(2) Assessment of the potential impact on the marine environment

A: Radiation impact assessment to the public (UNSCEAR*-methodology)

- **The impact to public will be less than 1/100,000 of natural radiation exposure** (2.1 mSv/year) in Japan.

  Premise: This estimate is calculated, assuming that 22 trillion Bq per year of tritium and other radionuclides in the ALPS treated water will be discharged after the ALPS treatment.

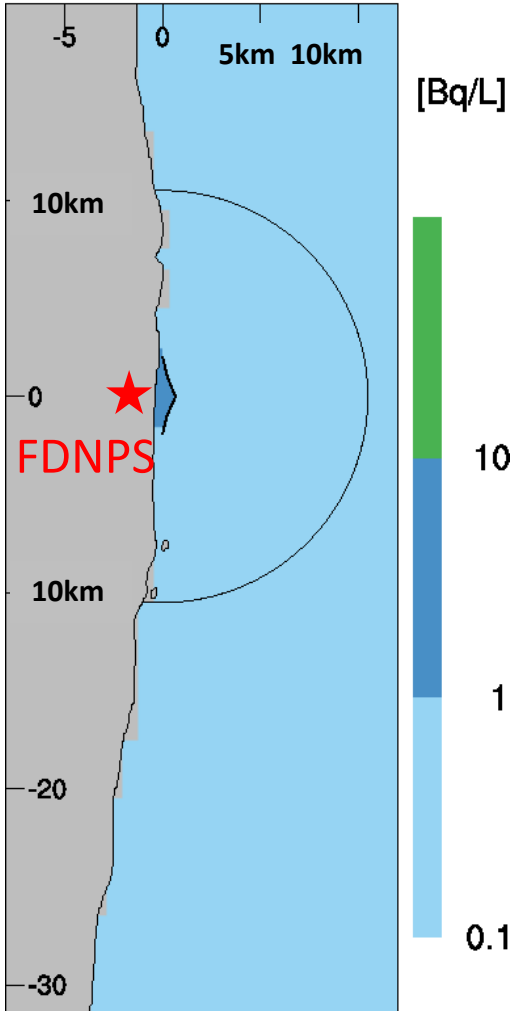
  * United Nations Scientific Committee on the Effects of Atomic Radiation

B: Diffusion simulation (Picture)

- The areas in which tritium concentration exceeds the background level (1 Bq/L) will be **limited to within 2km from the FDNPS**.
- Even in the areas, **the tritium concentration (1 to 10 Bq/L) is far lower than the WHO drinking water guideline value (10,000 Bq/L)**.

  Premise: 22 Trillion Bq of tritium (the operational target value for discharge before the accident) is discharged per year. Planned discharge will be conducted within this target.

⇒**Additional measures** based on international standards and practices for the assessment will also be taken. (To be published in due course.)



(3) Environmental monitoring

- The Government will strengthen and enhance monitoring before and after the discharge in cooperation with the international community.
- Transparency will be ensured by activities such as IAEA monitoring project.

2. Transparency and accountability

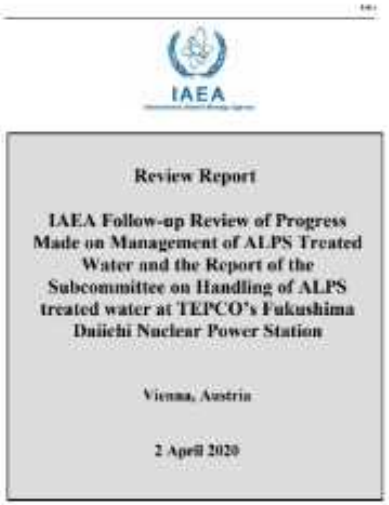
1) Providing scientific evidence and information

- **Briefing sessions** for media and diplomatic missions
- **Monthly Report** on the discharge record and monitoring results
- **Technical briefings** on occasions of international conferences
- IAEA **Reports** on the FDNPS decommissioning and the surrounding areas
  (https://www.iaea.org/newscenter/focus/fukushima/status-update)
- **Relevant Information (METI website)**
  (https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/index.html)

The 105th briefing session (Feb 3, 2020)

2) IAEA experts' findings (April 2, 2020)

- The IAEA Review Team assessed "**The two options selected (discharge into the sea and vapor release) are technically feasible and would allow the timeline objective to be achieved**."
- The IAEA Review Team also notes that the **ALPS treated water will be further purified as necessary** to meet the regulatory standards for discharge before dilution.
- The IAEA Review Team is **not aware of a solution currently available for the separation of tritium** commensurate with the concentration and the volume of ALPS treated water.


IAEA

Review Report

IAEA Follow-up Review of Progress Made on Management of ALPS Treated Water and the Report of the Subcommittee on Handling of ALPS treated water at TEPCO's Fukushima Daiichi Nuclear Power Station

Vienna, Austria

2 April 2020

https://www.iaea.org/sites/default/files/20/04/review-report-020420.pdf