2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

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Enhancement of peaceful uses of nuclear science and technology

Working paper submitted by Japan*

I. Introduction

The peaceful uses of nuclear energy, enshrined in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as inalienable right of all the Parties to the Treaty, have contributed to peace and prosperity of the world and their significance has been repeatedly confirmed at the past NPT Review Conferences. Japan is of the view that more should be done to enhance peaceful uses of nuclear science and technology, recognizing that such uses have the potential to make a tangible contribution to effectively addressing global challenges for sustainable development and environment in such a way as to facilitate the future implementation of the 2030 Agenda for Sustainable Development Goals (SDGs).

Japan considers it indispensable to raise awareness among the public in general across the world of the tangible benefits made available by, and the great potential of, nuclear technology for the welfare of humankind. Raising public awareness is key to ensuring the financial and human resources necessary for States to fully realize the potential of such technology.

In this regard, the role of the International Atomic Energy Agency (IAEA) is indispensable and Japan highly appreciates the IAEA's long-standing contribution to the promotion of peaceful uses of nuclear energy and its active engagement in addressing global and emerging challenges, including the COVID-19 pandemic.

With the above recognition, Japan stresses the importance of the following elements for the enhancement of peaceful uses of nuclear science and technology.

First, the level of accessibility to nuclear science and technology should be further improved for the benefit of the largest possible number of people, in particular in developing countries. Capacity building, technology transfer, provision of equipment, building cooperation networks, facilitating cooperation among countries

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and reinforcing regional cooperation mechanisms such as AFRA,[1] ARASIA,[2] ARCAL[3] and RCA[4] will serve to meet this objective. In this regard, Japan will continue its positive contributions in this field, as one of the major contributors to the IAEA Technical Cooperation Fund. Japan firmly believes that Member States and the IAEA Secretariat should make efforts to ensure that the Technical Cooperation Program is implemented effectively under the efficient management by the IAEA Secretariat.

Second, nuclear science and technology should be utilized in broader areas to better meet fundamental needs of people in State Parties. In this regard, Japan continues to support various projects in the IAEA, including the Zoonotic Diseases Integrated Action (ZODIAC) project, Nuclear Technology for Controlling Plastic Pollution (NUTEC) project and Rays of Hope project through the IAEA Peaceful Uses Initiatives (PUI).

Third, the promotion of the peaceful uses must be accompanied by commitments to the highest standards of safety, security, as well as effective safeguards. These are the integral elements which enable sustainable and responsible peaceful uses of nuclear energy. In this regard, Japan has been advancing the decommissioning of TEPCO's[5] Fukushima Daiichi Nuclear Power Station (FDNPS) and environmental restoration activities off site, with the cooperation of the IAEA. Based on more than six year long process of comprehensive study on multiple disposal methods by experts and reviews by the IAEA,[6] the Government of Japan announced the "Basic Policy" in April 2021, which selects discharge into the sea as the method for disposing of the ALPS (Advanced Liquid Processing System) treated water.[7] Subject to the approval of the independent Nuclear Regulation Authority (NRA) and other procedures, TEPCO would conduct discharge into the sea, while ensuring safety of humans and the environment. The IAEA acknowledges discharge into the sea as technically feasible and in line with international practice. (For further chronological details of Japan's cooperation with the IAEA on ALPS Treated water at TEPCO's Fukushima Daiichi Nuclear Power Station, please see the appendix.) Japan will continue to work closely with the IAEA, which has expertise in this field, and to fully assume the

[1] the African Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology

[2] the Cooperative Agreement for Arab States in Asia for Research, Development and Training related to Nuclear Science and Technology

[3] the Regional Cooperative Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean

[4] the Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

[5] Tokyo Electric Power Company

[6] 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
Review Report IAEA INTERNATIONAL PEER REVIEW OF MID-AND-LONG-TERM ROADMAP TOWARDS THE DECOMMISSIONING OF TEPCO'S FUKUSHIMA DAIICHI NUCLEAR POWER STATION (Fifth Review) Vienna, Austria Tokyo and Fukushima Prefecture, Japan June – August 2021
https://www.iaea.org/sites/default/files/21/08/review-report-270821.pdf
Mission Report IAEA INTERNATIONAL PEER REVIEW MISSION ON MID-AND-LONG-TERM ROADMAP TOWARDS THE DECOMMISSIONING OF TEPCO'S FUKUSHIMA DAIICHI NUCLEAR POWER STATION (Fourth Mission) Tokyo and Fukushima Daiichi NPS, Japan 5-13 November 2018
https://www.iaea.org/sites/default/files/19/01/missionreport-310119.pdf

[7] The announcement of the basic policy is about the discharge of water which meets regulatory standards by diluting further the ALPS treated water that has already been purified sufficiently. The water to be discharged into the sea is NOT "contaminated water".

accountability on the decommissioning of TEPCO's FDNPS including the handling of ALPS treated water to the international community, providing all relevant information in a transparent manner, based on scientific evidence.

Fourth, the situation at Ukraine's nuclear facilities caused by Russia's actions is a matter of great concern, from the perspective of the nuclear safety, security, and safeguards. The restoration of sovereignty and territorial integrity of Ukraine, as well as implementation of the mandate of the IAEA within Ukraine, should be the way forward to ensure nuclear safety, security and safeguards. The aggression by the Russian Federation and its related actions hereto should be condemned in the strongest terms. Japan firmly supports efforts of the IAEA, to provide assistance for the safe and secure operation of Ukraine's nuclear facilities, as well as proper safeguards activities. To support the IAEA's activities, Japan announced a pledge of 2 million euros in May 2022.

On the basis of the above understandings, Japan wishes to prepare elements for final outcomes of the 10th NPT Review Conference in section II below for further consideration by State parties.

II. Proposed elements for final outcomes of the 10th NPT Review Conference on the importance of promoting peaceful uses of nuclear science and technology

A. Basic principle

The Review Conference reaffirms that, under the Treaty on the Non-Proliferation of Nuclear Weapons, all States Parties enjoy the inalienable right to the development of research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I, II and III.

The Conference also reaffirms that the use of nuclear science and technology must be accompanied by commitments to and on-going implementation of safeguards, as well as safety, security and radiation protection at an appropriate and effective level, in accordance with States' national legislation and respective international obligations.

B. Peaceful uses of nuclear science and technology for addressing global challenges

The Conference stresses that peaceful uses of nuclear science and technology can make unique and significant contributions in addressing various global challenges for the sustainable development and environment, including the implementation of the SDGs.

The Conference supports the IAEA's efforts under the leadership of Director General, Rafael Grossi, to contribute to achieving the SDGs, and emphasizes the importance of securing both financial and human resources to effectively address such global challenges.

The Conference recognizes, in this regard, the importance of the following elements for further enhancement of peaceful uses of nuclear science and technology.

Enhancing accessibility to nuclear science and technology

The Conference emphasizes the importance of providing assistance, in particular to developing countries, in order to enhance access to nuclear science and

technology, through various measures including capacity building, provision of equipment, strengthening regional networking and regional cooperation frameworks, facilitating cooperation among developing countries, and encourages those States Parties and relevant organizations in a position to do so to provide necessary assistance or promote cooperation to this end.

In this regard, international technical cooperation plays a key role in achieving the goal of the NPT in the area of peaceful uses of nuclear science and technology.

Enhancing opportunity for nuclear application in wider areas

The Conference emphasizes the importance of broadening areas for nuclear applications to enable States to meet their fundamental needs for socio-economic development in wide-ranging areas such as human health including cancer therapy, nutrition, food security and safety, agriculture, water management, environmental protection, industrial applications as well as energy production.

The Conference recognizes the importance of the PUI as a valuable mechanism to provide prompt and flexible support to recipient countries in line with their socio-economic and emergency need as well as to enhance opportunity for nuclear application in wider areas.

The Conference welcomes and supports the IAEA's initiatives, including the ZODIAC, NUTEC Plastics and Rays of Hope, for addressing global challenges, such as COVID-19 pandemic, plastics pollution and cancer burden through the PUI.

Enhancing nuclear safety and radiation protection

The Conference emphasizes the importance of enhancing nuclear safety and radiation protection as vital elements for the development of nuclear science and technology, both in nuclear power and non-power applications, and underlines the importance for the State Parties to continue to maintain and improve national and international infrastructures for nuclear safety and radiation protection.

The Conference welcomes the efforts made by the IAEA to share the lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station in March 2011 for further improvement of nuclear safety. The Conference notes in this regard the outcomes of the International Conference on a Decade of Progress after Fukushima-Daiichi: Building on the Lessons Learned to Further Strengthen Nuclear Safety in November 2021.

C. Role of the IAEA

The Conference acknowledges the central role of the IAEA in promoting peaceful uses of nuclear science and technology in a safe, secure and sustainable manner with transparency, and, in particular, stresses the importance of the IAEA's work to cooperate with its Member States through its technical cooperation programmes based on their respective national needs. The Conference also emphasizes the valuable contribution of the IAEA through its work to coordinate international efforts to enhance nuclear safety, radiation protection and nuclear security by fostering information exchanges and knowledge transfer, developing safety standards and other relevant guidance documents, providing peer review services, and facilitating relevant international legal frameworks.

The Conference reaffirms the importance of the role of the IAEA when tackling new global challenges such as the COVID-19 pandemic in cooperation with other relevant international fora.

The Conference welcomes that the renovation of the Nuclear Application Laboratories (ReNuAL) project through the PUI, greatly contributes to promote peaceful uses of nuclear science and technology and to further strengthen the above-mentioned activities of the IAEA.

The Conference acknowledges in this respect the PUI as a valuable effort to supplement the IAEA Technical Cooperation Fund and mobilize additional resources for the IAEA's programmes, and recognizes that the PUI and other extra-budgetary contributions have enhanced application of nuclear science and technology in large number of IAEA Member States especially since the launch of the PUI in 2010.

D. International Legal Frameworks

The Conference recognizes the importance of improving relevant international legal frameworks in the field of nuclear safety and nuclear security. The Conference also welcomes in this regard the progress in enhancing the implementation of the Convention on Nuclear Safety (CNS), including the adoption of the February 2015 Vienna Declaration on Nuclear Safety, the entry into force of the Convention on Supplementary Compensation for Nuclear Damage (CSC) in April 2015, recognizing this as an important step towards establishing a global nuclear liability regime and the entry into force of the Amendment to the Convention on the Physical Protection of Nuclear Material (A/CPPNM) May in 2016.

E. Education and public communication

The Conference recognizes that education and public communication play an important role in disseminating information to, and raising awareness of the general public, on the benefits of peaceful uses of nuclear science and technology, and encourages all State parties, groups of countries and relevant organizations to work toward this end.

F. Nuclear Safety and Security in Ukraine

The Conference is profoundly concerned, in this context, by Russia's actions at and in the direct vicinity of nuclear facilities in Ukraine, and condemns any acts compromising the safety of nuclear installations devoted to peaceful purposes.

The Conference expresses further grave concern that the Russian Federation's aggression is impeding the Agency from fully and safely conducting safeguards verification activities at Ukrainian nuclear facilities within its internationally recognised borders, in accordance with the Treaty on the Non-Proliferation of Nuclear Weapons, Ukraine's safeguards agreement and the Statute of the IAEA.

The Conference strongly endorses the following seven pillars outlined by IAEA Director General:

(1) The physical integrity of the nuclear facilities, whether it is reactors, fuel ponds, or radioactive waste storage and disposal sites, must be maintained;

(2) All safety and security systems and equipment must be fully functional at all times;

(3) Operating staff must be able to fulfil their respective safety and security duties, with appropriate staff rotation, and have the capacity to make safety and security-related decisions free of undue pressure;

(4) There must be secure off-site power supply from the grid for all nuclear sites;

(5) There must be uninterrupted logistical supply chains and transportation to and from the sites;

(6) There must be effective on-site and off-site radiation monitoring systems and emergency preparedness and response measures; and

(7) There must be reliable communications of the sites with the regulator, as appropriate;

The Conference urges all countries to make available to the IAEA all necessary resources and equipment to facilitate technical support to Ukraine and provide safety to individuals implementing the seven pillars in areas of armed conflict.

Appendix

Further chronological details of Japan's cooperation with the IAEA on ALPS Treated water at TEPCO's Fukushima Daiichi Nuclear Power Station

In July 2021, Japan and the IAEA signed the Terms of Reference (TOR) on Reviews of Safety Aspects of Handling ALPS treated Water, and based on this TOR, the IAEA has been and will continue to conduct reviews on the safety and regulatory aspects of the handling, including TEPCO's assessment on radiological impact on environment, as well as marine monitoring. If the IAEA makes any additional comments during its review they will be considered and reflected before the discharge, as necessary, in TEPCO's plan in regard to the discharges.

In February and March 2022, IAEA officials and IAEA-designated international experts conducted the safety and regulatory review missions

In April and June 2022, the IAEA issued a progress report on each review mission respectively, which are now available on the IAEA's website.[8]

In May this year, IAEA Director General Grossi stated during his visit to Japan that the IAEA will be able to ascertain that the discharge of processed water will be done in full conformity with the international standards without causing any harm to the environment.

Further actions will be taken based on the observations raised in the IAEA's report. As such, the IAEA and international experts, as a third party, have been reviewing our efforts, and the review will continue. It was also confirmed that IAEA laboratories will conduct the analysis of the concentration of radioactive materials of samples of the ALPS treated water.

[8] https://www.iaea.org/sites/default/files/report_1_review_mission_to_tepco_and_meti.pdf
https://www.iaea.org/sites/default/files/report-2-review-mission-to-nra.pdf