

## Country Report of Japan<sup>1</sup>

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Your Excellencies, distinguished delegates, ladies and gentlemen, on behalf of Japan, I have the honor to introduce the current situation of nuclear energy research, development and utilization activities in Japan to this the seventh Ministerial-Level Meeting of the Forum for Nuclear Cooperation in Asia. Since the last Meeting in Tokyo, there have been steady progresses in nuclear energy activities in Japan. Today, I would like to report the activities in nuclear energy area and radiation utilization and R&D area. Then, I would touch upon a recent hot issue of efforts for non-proliferation. Finally, I would also mention the recent fruits and future possibility of FNCA.

At the outset, I would like to emphasize that the research, development and utilization of nuclear energy in Japan has been promoted all the time, strictly limiting it to peaceful use and on the premise of ensuring safety, for purposes of securing future energy resources, promoting academic and industrial activities, and thus contributing to the enhancement of the welfare of human society and the standard of living in Japan. An important guideline of the government policy for the research, development and utilization of nuclear science and engineering is “the Framework for Nuclear Energy Policy” decided by the Commission last year. It defines four basic objectives of nuclear energy policy, including a) enhancing contributions of nuclear power generation to the stable supply of energy and as a strong measure against global warming, and b) expanding the application of radiation technologies in the areas of science, industry, agriculture and medicine.

As for nuclear power generation, Japan has 55 commercial nuclear power plants in operation with the combined capacity of 50 GWe, of which annual output accounts for about one third of national electricity generation. Furthermore, two units are under construction and several more are in the preparation stage. It should be noted that these plants contribute to the improvement of degree of energy self-sufficiency in Japan and the fulfillment of international obligation to reduce carbon-dioxide emission prescribed in the Kyoto Protocol.

In view of these contributions of nuclear power, Japan considers it appropriate to continuously maintain the share of nuclear power generation at least at the present level

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of 30 – 40% of the total electricity generation also after the year 2030. To that end, Japan is pursuing, on the one hand, the efficient utilization of existing plants through the increase in plant availability and the extension of plant life on the premise of safety assurance, and the development of advanced LWRs as replacements of existing plants, most of which will start the retirement in 20-30 years, on the other.

As for nuclear fuel cycle to support these nuclear power generation activities, Japan makes it a basic policy to utilize plutonium and uranium recovered from spent fuel. Several electric companies have already started to prepare for the loading of mixed uranium-plutonium oxide fuel or MOX fuel to their nuclear power plants before 2010, obtaining the understanding of the people in the local area where the site is located through careful public hearings and information activities. The construction of the first commercial reprocessing plant at Rokkasho-village is currently at the final stage and its operator announced recently that it had successfully started to produce mixed uranium and plutonium oxide powder as its product, which will be used for MOX fuel to nuclear power plants from the year 2012 onwards.

The research and development of fast-breeder reactor (FBR) and its fuel cycle technologies has been promoted by accumulating operating experiences of sodium cooled reactors and by executing a feasibility study of advanced concepts for FBR and their fuel cycle systems. Currently a prototype FBR, “Monju,” of which operation has been suspended since the sodium leakage incident in 1995, is undergoing repair works so as to restart its operation in 2008. The Atomic Energy Commission will decide soon a new policy for the promotion of technology development for commercial FBR and its fuel cycle based on such advanced concepts, aiming at their introduction in around 2050.

In order to promote these activities, it is essential to maintain a good relationship between promoter of such activities and the local communities that accept the siting of facilities for these activities. Therefore, the government and relevant business entities are asked to ensure transparency of information, enhance public hearings and information activities, develop educational programs, and promote dialog with local governments which claim to be responsible for the safety of the public. Regulators are requested in this respect to assure the public involvement in regulatory decision processes and inform the decision in the context of facilitating risk communication with local communities, giving priority to the understanding of what the people really wants to know.

The promotion of the utilization of radiation is another important policy area, because radiation technology to diagnose and treat disease, to improve agriculture through pest

control and mutation, to monitor pollution, to produce semi-conductors and to expand water supplies is used by many countries to advance development in diverse fields. In Japan, food irradiation is currently allowed only to suppress the sprouting of potatoes though irradiation is widely accepted as a means of reducing food-borne illness in the international community. Recognizing that one of the reason for this situation is the fact that sufficient technical information thereof has not been provided to the public in Japan, the Atomic Energy Commission decided that significant initiatives be put in place to improve the social environment and to enhance the receptiveness for the broader introduction of food irradiation, and that the first round of official examination and assessment should be done concerning the irradiation of spices. The Atomic Energy Commission conveyed this decision to the relevant governmental and private organizations, expecting that they will take relevant actions in accordance with it as soon as practicable.

The utilization of nuclear energy cannot be sustained in the competitive market without continuous supply of new knowledge and technologies from relevant R&D activities. Japan is pursuing basic research and development activities including those to explore engineering concepts of innovative ideas of nuclear science and technology, such as fusion, nuclear hydrogen, and so on. For those purposes, Japan has constructed large scale research facilities such as JT-60, a fusion research facility, HTTR, a high temperature test reactor that produces helium gas of 950°C, HIMAC, a heavy-ion accelerator for medical application including cancer therapy, and so on. Various facilities for this purpose are still under construction, including an experimental fusion reactor by participating in ITER program and High Intensity Proton Accelerator Facility that provide the experimental facilities for materials and life science, hadron and neutrinos physics, and such nuclear energy technology as transmutation of radioactive material, with a high intensity beam.

As I going on to the next topic, I would like to emphasize that Japan considers it crucial for the global promotion of the peaceful use of nuclear energy to maintain and reinforce international nuclear non-proliferation framework. In addition to the basic framework provided by the Atomic Energy Basic Law to strictly limit nuclear activities to peaceful purposes, the Government of Japan continues to adhere to the “Three Non-Nuclear Principles”, pursue strict compliance with the IAEA Safeguards Agreement including the Additional Protocols, and increase the assurance of the transparency of plutonium usage by guiding the utilities to make advanced publication of utilization plans. At the same time, Japan promotes early ratification of CTBT (Comprehensive Nuclear Test Ban Treaty), urges other countries to sign IAEA’s Additional Protocol, and actively participates in discussions about the Multilateral Nuclear Approach (MNA) proposed by Dr. ElBaradei of the IAEA. It is an example of such activities in accordance with this

policy that Japan made a proposal to establish “the IAEA Standby Arrangements System for the Assurance of Nuclear Fuel Supply” at IAEA’s General Conference in September this year. The proposal is designed to complement “the six-country proposal” made by the U.S., the U.K, Russian Federation and other three European countries on the system of fuel supply assurance in case of disruption of the market due to political reasons. Japan will continue to constructively participate in and contribute to international debates on the issue under the IAEA and other entities.

From this viewpoint, the nuclear test by North Korea is absolutely unacceptable as it gives a blow to the international communities’ efforts for nuclear non-proliferation. The Japan Atomic Energy Commission has strongly urged North Korea to immediately abandon its nuclear testing and nuclear development program and to promptly return to the international nuclear non-proliferation regime.

As we all recognize well, peaceful uses of nuclear energy, including radioactive sources, are extremely beneficial for the socio-economic development of the international society. Japan continues to pursue proactive cooperation with countries and regions in Asia through bilateral arrangements and multilateral frameworks including FNCA. Under the FNCA framework, twelve projects in eight fields are currently in progress. The results of these projects encourage us to continue our contribution to further progress in these projects and starting of new projects, which will benefit the FNCA member countries as well as Japan.

It is also a pleasure for me to recognize that a significant progress has been made in the Asian Nuclear Training and Education Program (ANTEP), whose basic concept was agreed in the previous Ministerial-level Meeting in Tokyo. As for the Panel on “Role of Nuclear Energy for Sustainable Development in Asia,” which was launched three years ago, Japan views it as a significant activity for countries in FNCA region to conclude the first focal debates on the role of nuclear power generation in the context of med- and long-term energy policy, including issues to be explored further, in relation with the introduction of nuclear energy, and reach a certain level of consensus. Japan hopes that the FNCA will continue this kind of activities so that member countries can timely develop infrastructure needed to introduce nuclear power when they decide to do so, including human resource development, nuclear non-proliferation regime and safety and security framework.

With that, I conclude my report, promising that Japan will continue to pursuing cooperation with countries in the region in the spirit of partnership for the promotion of the advancement of nuclear science and technology and the effective utilization of such advancement for social and economic development in each country.