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Statement delivered in the Board of Governors on 27 November 2008 by the Governor for Japan concerning Japan's activities in technical cooperation

On 27 November 2008, the Governor of Japan delivered a statement in the Board of Governors concerning Japan's activities in technical cooperation.

As requested in that statement, the full text of the statement is herewith circulated for the information of Member States.

Japan

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Statement by Ambassador Yukiya Amano at the Board of Governors Meeting on 27 November 2008

Agenda Item 2: Technical Cooperation
Report of the Technical Assistance and Cooperation Committee (GOV/2008/61)

Thank you Madam Chairperson.

Japan already introduced some features of its cooperation in relation to the peaceful use of nuclear technology during the Technical Assistance and Cooperation Committee Meeting on 24 November.

Allow me to re-introduce the same statement with slight modification at this Board meeting, however, in order to avoid redundancy, I would like to kindly request the Secretariat to circulate the full text of the above-mentioned statement to Member States in the form of an INFCIRC.

Thank you Madam Chairperson.

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I. Introduction

Japan has conducted technical cooperation within areas including nuclear applications, nuclear safety/security, nuclear power, and non-proliferation. Today, with the permission of the chairperson, I would like to highlight some of the salient features of our activities. The full text will be circulated in written form.

Allow me first to briefly touch upon the current status of Japanese nuclear technology, as this technology is the basis on which our cooperation has been developed.

As a country with scarce natural resources, Japan has attached vital importance to the peaceful uses of nuclear energy. It launched commercial uses of nuclear energy, in addition to research and development activities, at a very early stage, and has since then continuously pursued their advancement. As a result, the Japanese nuclear industry is now renowned for its highly advanced, cutting-edge technologies.

Seen from a wider perspective, science and technology are the foundations of the prosperity of my country. Japan, both in its private and public sectors, has invested heavily in the development of advanced technologies. The ratio of expenditures in these domains to the GDP is among the highest in the world. It is not by chance, in our view, that four of our scientists and researchers are going to be awarded the Nobel Prize this year.

Now, I would like to briefly sketch how benefits of these technologies have been shared with other countries through activities such as the IAEA technical cooperation.

II. Cooperation by Areas

A. Nuclear Application

I) Human Health

Nuclear applications have an important role to play in promoting Human Health. According to the World Health Organization (WHO), cancer is the biggest cause of death worldwide and accounted for 7.9 million deaths (around 13% of all deaths) in 2007.

Japan has always supported the Program of Action for Cancer Therapy (PACT). In 2006, it took the initiative to establish a mechanism to address the financial difficulties which endangered PACT. Through this mechanism, Japan has contributed $345 thousand to PACT. It also made available to the Agency, a very prominent medical doctor to support the PACT.

We are also making efforts nationally to share our experience with other countries in the field of cancer therapy. Being the host country of the fourth Tokyo International Conference on African Development (TICAD IV), Japan organized a technical tour at the beginning of this year for African countries. This tour enabled the participants to be familiarized with our activities in cancer radiotherapy technology development. Responding to the interest shown by the participants, the Japan International Cooperation Agency (JICA) decided to hold a basic training course on radiation therapy technology, which covered topics ranging from radiation diagnosis, including positron-emission tomography (PET), to heavy particle radiotherapy. I am happy to note that we have already welcomed trainees from African countries as a follow up to the technical tour.

Let me now explain the heavy particle cancer radiotherapy technology that I just mentioned. In short, it is a form of radiation therapy that employs accelerated beams and has comparative advantages over other forms of cancer treatment in three regards. It enables;

- First, the treatment of delicate parts of body such as the head, the neck, bones and soft tissues;
- Second, the reduction of therapy durations, and
- Third, the alleviation of physical burdens on patients when compared with the surgical removal of cancers.

Japan is one of the leading countries in the field of heavy particle cancer radiotherapy technology. The National Institute of Radiological Science (NIRS) has been promoting this

technology and has also constructed the world's first heavy ion medical accelerator, known as "HIMAC". The Gunma University is now constructing a second one. Both the NIRS and Gunma University actively welcome trainees from abroad.

Japanese cooperation in the field of Human Health is not limited to cancer therapy. Since 2005, Japan has been acting as Project Lead Country in Human Health under the Regional Cooperative Agreement for Research, Development and Training in the Asia and Pacific region (RCA), and over 300 trainees have so far participated in training courses for Human Health under the auspices of the RCA. These RCA's activities are closely linked to those of the Forum for Nuclear Cooperation in Asia (FNCA), a framework that was initiated by Japan. A manual for trainees prepared by FNCA has, for instance, been widely used in a number of RCA training courses. This can be viewed as an example of fruitful partnership.

The NIRS that I mentioned above is an IAEA collaborating center, and has also extended, in a structured way, assistance to the Agency's research and training activities in the field of biological consequences of low-dose radiation.

II) Food and Agriculture

Now, I would like to touch upon radiation applications in the field of Food and Agriculture, inter alia, the sterile insect technique (SIT).

We have a unique experience in Japan with regard to the SIT. This episode dates back to 1972, when the administrative rights over Okinawa, an island in the southern part of Japan, were returned to Japan. Okinawa has a semi-tropical climate and is famous for its exotic fruits and vegetables, one of which is the bitter gourd, also known as "the king of the summer vegetables" due to its wealth in Vitamin C. Once this reversion was effectuated, Okinawa was eager to make shipments of bitter gourds across the country. However, by 1972 the native melon fly had done substantial harm to bitter gourd crops, and Japan at the time had a law banning the shipment of plants affected by parasites from Okinawa to the rest of the country. In an effort to overcome this issue, the Government of Japan decided to make use of the SIT in 1975. These efforts culminated in the eradication of the melon fly in Okinawa, ultimately allowing all people across the country to enjoy these nutrient-rich bitter gourds. Even now, in parts of Okinawa and elsewhere, we are working to combat and eradicate the sweet potato weevil, an insect harmful to the sweet potato, using the SIT.

As Japan has these experiences of its own, it is eager to cooperate with other Member States struggling with similar challenges. The SIT can be of great help to livestock management in Africa, through the eradication of the Tsetse flies and other harmful insects.

In 2006, the Government of Japan and the United Nations extended assistance totaling $1.76 million through the Trust Fund for Human Security, to a Tsetse fly eradication project in Ethiopia, implemented by the IAEA in partnership with the Food and Agriculture Organization. (This project is entitled "Establishing a zone Free of the Tsetse and Trypanosomes Problem in the Southern Rift Valley, Ethiopia, and Assisting Rural Communities in Agricultural and Livestock Development"). It is expected that these major threats affecting agriculture in the region will be eliminated, and that livestock, agricultural and overall development in the Southern Rift Valley of Ethiopia will be accelerated. In our view, this project merits special attention, because it exemplifies good partnership between a Member State, the Agency and other international organizations.

iii) Water Management

Let me now discuss the issue of water management. Aquatic conservation is essential in the endeavor to attain "the Millennium Development Goals (MDGs)". The IAEA has a renowned laboratory in Monaco known as the Marine Environment Laboratory (IAEA-MEL), established in 1961. This laboratory has conducted research with regard to environmental issues arising from contamination due to radioactive and non-radioactive sources. Mr. Rinnosuke FUKAI, who was one of the chemists at the National Institute of Fisheries under the auspices of the Ministry of Agriculture and Forestry of Japan, joined the Monaco Laboratory in 1962. He was the Head of the Radiochemistry Section for 20 years from 1962 to 1982 and Director from 1982 to1986. Mr. Fukai contributed significantly to the development of this laboratory, and in particular to the development of water management technology.

The Monaco Institute has played an important role in the protection of the marine environment in the Far Eastern Asian Region. In 1993, it was found that liquid radioactive waste originating from dismantled nuclear submarines was dumped off the coast of Vladivostok. In 1994, Japan, Russia, the Republic of Korea and the IAEA/Monaco Institute dispatched a joint mission to monitor the marine environment in the Far Eastern Asian Region. This research ascertained that the marine environment in this region was safe. Nevertheless, as follow up, a low-level liquid radioactive waste treatment plant was constructed with Japanese assistance, and unpurified liquid radioactive waste has not been dumped since. As an additional follow up activity, Japan launched a project in 2003, for the dismantling of nuclear submarines in the far-east region of the Russian Federation, in partnership with Russia, Australia, New Zealand and the Republic of Korea, for the purpose of nuclear disarmament and non-proliferation in addition to marine environmental protection in this area. This project was named "Star of Hope" after the shipyard "Zvezda" (meaning "star" in Russian) where the project was initiated.

Lastly, I would like to bring it to your attention that Japan will host the 31st Meeting of National RCA Representatives next year. Japan sincerely hopes that the meeting will further promote the use of radiation applications not only in Asia but also in the every region of the globe.

B. Nuclear Safety/Security

Japan has made a number of notable contributions in the field of nuclear safety and security as well.

After the Chernobyl accident, the Japanese regulatory body invited over 1000 nuclear power operation trainees from Eastern European countries, China and Russia to share Japanese experiences and knowledge on nuclear power operation safety. Japan is now further expanding its activities relating to the improvement of nuclear power operation safety in the Asian region.

Japan has assisted the community affected by the Chernobyl accident in Ukraine through the Human Security Fund established at the United Nations, and this month, contributed a further $2.6 million to support projects in Ukraine, Belarus and the Russian Federation. These projects provide affected communities with necessary health and environmental information.

Following the Chernobyl accident, Japan has contributed a total of $ 81 millions to the Nuclear Safety Account (NSA) and to the Chernobyl Shelter Fund (CSF) to help enhance the safety of the Chernobyl Nuclear Power Plant. In 2000, as the then G8 Nuclear Safety Working Group (NSWG) Chair, Japan took leadership in shutting down the Chernobyl Nuclear Power Plant. This year, as the G8 Chair, Japan is coordinating the NSA in such a manner as to fill financial gaps.

Turning our attention to Asia, Japan, in cooperation with the Agency, has been highlighting issues relating to nuclear safety infrastructure in Asia since 1990. Notably, the Asian Nuclear Safety Network (ANSN) was established in collaboration with the Agency and like-minded Member States, with a view to sharing nuclear safety information and facilitating human development for nuclear safety in the region. High expectations have been placed on the ANSN, as a nuclear safety network model.

Following the earthquake that hit the Niigata Prefecture, Japan, in July 2007, we learned numerous lessons with regard to the improvement of seismic safety in nuclear

power plants. Bearing in mind that some earthquake-prone countries are now initiating nuclear power programs, Japan has invited an IAEA mission and held workshops in order to share our experiences and lessons learned with regard to seismic safety. The Agency, with Japan's full cooperation, has also established an international nuclear seismic safety center in Vienna. These initiatives will contribute to the improvement of seismic safety of nuclear power plants globally.

Japan has made substantial efforts to help enhance nuclear security in Kazakhstan, both bilaterally and in collaboration with the Agency. In response to requests by the Public Health Committee of Kazakhstan, Japan implemented, in full cooperation with the Medical Department of the Nagasaki University, a variety of measures to mitigate the suffering of those who had been exposed to nuclear radiation in the area surrounding the nuclear test site in Semipalatinsk, Kazakhstan, set up during the Soviet era. In 1999, Japan provided a remote diagnostic system to Semipalatinsk Medical University and radiation measurement devices to Semipalatinsk Research Institute of Radiology and Environment.

C. Nuclear energy

Since the Chernobyl accident two decades ago, the nuclear industry has faced numerous challenges. Japan has vigorously continued its research and development activities on nuclear power, while maintaining a high level of safety. Consequently, cutting-edge technology for light water reactors has been developed. Japanese industry, for example, plays a vital role in providing large components for nuclear reactors such as pressure vessels.

In 1999, Japan established the Forum for Nuclear Cooperation in Asia (FNCA) to facilitate nuclear cooperation in Asia. The Japanese government has also organized support frameworks for Indonesia and Vietnam, in full cooperation with private sector actors, and has worked to contribute to pre-feasibility studies for the introduction of nuclear power in Vietnam.

Japan has contributed over $800 thousand to the Agency's nuclear infrastructure development activities. In August this year, Japanese experts were made available to the Agency for the purpose of nuclear infrastructure development.

Japan aims to develop a nuclear fuel cycle centering around light-water reactors. To complete this cycle, Japan has made strenuous efforts in R&D, with fast-breeder development at its cornerstone. Overcoming the sodium leakage accident in 1995, the "Monju" prototype fast-breeder reactor is expected to resume operation soon. Japan has

been sharing research results and data acquired from its R&D activities, including those relating to the "Monju" reactor and the experimental fast reactor known as "Joyo", with Member States at various IAEA meetings.

In the field of fusion energy research, Japan participates in the ITER project, contributing to it in terms of manufacturing research devices and of dispatching researchers and engineers.

D. Non-proliferation

Japan is equipped with one of the largest and the most complex nuclear fuel cycles in the world, and has gained substantial experience in relation to safeguards. Japan virtually represents a large-scale experimental field for safeguards technology. The Rokkasho Reprocessing Plant has, for instance, been placed under a "continuous safeguarding system", which was jointly developed by Japan and IAEA. In addition, the construction of the Mox fuel fabrication plant (J-MOX) will be guided by the concept of "safeguards by design". This plant is expected to offer a model for Random Interim Inspection (RII) and remote verification.

Japan has also been trying to improve the efficiency of safeguards, while maintaining their effectiveness, by using the latest advanced technology and statistical approaches.
In fact, the integrated safeguards approach employed at one of the Japan Atomic Energy Agency's (JAEA's) nuclear facility complexes, has resulted in a 30% reduction in human resources necessary for inspections at the site. This new approach will soon be widely used across Japan.

Japan has an impeccable record in satisfying the highest standard of IAEA safeguards and enjoys the confidence extended to it by the international community. Japan and the IAEA have together expanded the frontiers of safeguards technology. Japan is intent on continuing to play a leading role in this field.

III. Conclusion

These are just some examples of Japanese nuclear cooperation. Whilst some of these activities are not registered in the TC program and some others are conducted outside of the Agency's activities, they are equally useful in illustrating our potential for further cooperation.

Japan has a wide range of nuclear technologies for peaceful purposes and is ready to cooperate, with both developing and developed countries, in diverse areas such as nuclear applications, nuclear safety/security, nuclear power, and non-proliferation amongst others.

We believe that Japanese technologies are relatively unknown in the IAEA and are not being utilized pursuant to their full potential. It is in the interest of all Member States to make further use of these technological resources, by mutual effort. I hope that more people will visit Japan to become better acquainted with our technologies.

In order to advance Agency technical cooperation, it is vital to identify further technologies that are useful to the Agency and to Member States.