

The Current Status of the Peaceful Utilization of Nuclear Energy in Japan¹

Shunsuke Kondo
Chairman
Japan Atomic Energy Commission

Japan has been promoting the research, development and utilization of nuclear energy for the past fifty some years, limiting them to peaceful purposes, with a view to securing energy resources for the future, promoting science and industry, and thereby contributing to the improvement of the welfare of human society as well as the living standard of the people in Japan.

As a result, radiations and radioisotopes are extensively used in the various fields of science, medicine and industry in Japan today. As for nuclear power generation, 54 commercial nuclear power plants of which combined capacity is 48 GWe are in operation and supplying about 26 % of electricity and 10 percents of a primary energy in Japan. They are significantly contributing to the enhancement of Japan's energy security and playing an important role as a measure to combat global warming.

Last year, the then Prime Minister Yukio Hatoyama announced at the United Nations Summit on Climate Change that Japan aims to reduce its greenhouse gas emissions by 25% by 2020, if compared to the 1990 level, premised on agreement on the establishment of a fair and effective international framework and ambitious targets by all major economies, and pledged to mobilize all available policy tools. It is clear that the promotion of nuclear power generation is one of those essential tools in this endeavor.

The then Prime Minister Hatoyama also declared that he attaches great importance to Asian diplomacy. The main pillar of this policy is cooperation to prosper together, cooperation to save a green Asia and cooperation to protect human lives. I believe that the FNCA will be able to play an important role in this respect as a unique framework for nuclear cooperation in this region that can contribute to pursuing such policy objectives in various ways.

This June, the Government decided the New Growth Strategy of which focal policies are “green innovation” and “life innovation”. Through green innovation policy, Japan looks forward to promoting innovations in and dissemination of such technologies as renewable energies, nuclear power, storage batteries, next-generation lighting and automobiles, smart grids and eco-housing to take the lead in a transition to a a low-carbon society. The life innovation policy aims at promoting research and development of innovative pharmaceuticals

¹ Presented at the 11th FNCA Ministerial-level Meeting held in Beijing, China, Nov. 18, 2010

and medical and nursing care technologies, and turning medical, nursing care and other health-related industries into growth-driving industries.

In order to contribute to the attainment of these goals, the AEC is asking electric power companies, first of all, to improve the nation's average capacity factor of their plants that has been hovering around between 60% and 70% level in recent years due mainly to the effect of earthquake, by steadily finalizing the action to reconfirm the seismic safety of their plants and adopting new maintenance rules recently established.

At the same time the Commission is asking them to expand the nuclear power generating capacity also. Currently, two units are under construction and three more units are under licensing review. Electric power companies have announced that they will start the operation of another nine units within ten years or so. In parallel, they are promoting the construction of off-site interim storage facilities of used-fuel and the selection of a site for the geological disposal facility for high-level waste which are essential to assure sustainable nuclear power generation.

Japan is also promoting the research and development of fast reactors and related fuel cycles as a major long-term activity, aiming at its commercialization in 2050 or so. R&D of fusion energy and nonelectrical application of high temperature heat from nuclear reactors are also promoted steadily as long-term activities.

The promotion of the utilization of radiation also plays important roles in both green innovation and life innovation, because radiation technology is used to produce materials important to green innovation, such as functional materials for high performance batteries, new plants that can absorb a larger amount of carbon dioxide than the existing ones, carbon neutral plastic and so on, on the one hand, and to make a diagnosis of diseases and cure cancers in the medical field, on the other. In order to explore wider and deeper application of radiation in responding to the new growth strategy, the AEC has proposed to construct and operate various radiation facilities for diverse users.

A growing number of countries have expressed interests in nuclear power programs as a means to addressing climate change and energy security concerns. Needless to say, any country that utilizes nuclear energy should pursue continuous improvement in all areas related to nuclear safety, security and nonproliferation, adhering to relevant international standards including the standards, recommendations and codes of conducts developed by the IAEA, and nurturing not only safety culture but also nuclear security culture and nonproliferation culture in the organizations that are in charge of nuclear activities.

Considering the importance of developing infrastructure that assure safe, reliable and peaceful use of nuclear energy in those countries planning to introduce nuclear power generation,

Japan has decided to expand its assistance to those countries, supporting their effort of capacity building and establishment of a necessary legal framework, in particular. In order to ease the access to various training programs to be promoted in Japan for this purpose, an organization tentatively called Japan Nuclear Human Resource Development Network will be established soon as one-stop window for foreign applicants who want to take nuclear training programs conducted in Japan.

In this connection, I would like to mention that, at the Nuclear Security Summit held in Washington D.C. this April, Japan committed to the establishment of an Integrated Support Center for Nuclear Non-proliferation and Nuclear Security to share Japan's experience in peaceful and secure use of nuclear energy with countries that are preparing for the introduction of nuclear energy.

It is planned that this center will offer training courses on (1) nuclear security, (2) the IAEA safeguards and the state system of accounting for and control of nuclear material (SSAC) and (3) international nuclear nonproliferation framework. As a kick off activity of this Center, a nuclear security training course will be held in cooperating with the IAEA this month. Participation from FNCA countries will be highly appreciated.

In conclusion, Japan is continuing to pursue the peaceful use of nuclear energy for the benefit of people, pursuing innovation for a greener and healthier world. Japan will also continue to cooperate with countries in the region for the advancement of nuclear science and technology and the effective utilization of such advancement including nuclear power generation for social and economic development in each country, in the spirit of prospering together, saving a green Asia and protecting human lives.