2008 New Year's Address

January 8, 2008
Atomic Energy Commission

Happy New Year!

Taking the opportunity to give a new year's address, the Atomic Energy Commission (AEC) hereby expresses its views on nuclear policies.

Current Status and Future Prospects of the Research, Development and Utilization of Nuclear Energy

From the perspective of ensuring a stable supply of energy and coping with global warming, more and more countries are seeking to expand their capacities to supply nuclear energy along with the use of renewable energy. For instance, India and China, which currently depend on coal for most of their energy supply, have started to make efforts for increasing nuclear power generation facilities. In the United States, after a long period during which no new nuclear power plants were constructed, a number of applications for construction permits or approval have been filed recently. Under such circumstances, Japan should, based on its experience of constructing and operating nuclear power plants exclusively for peaceful purposes without interruption, consider that now is the time to contribute to promoting such global trends toward the use of nuclear energy while ensuring nuclear safety, security and nonproliferation.

In Japan, nuclear power accounted for 35% of the total electricity supply in FY2001. Subsequently, however, due to the prolonged shutdown of some nuclear power plants because of measures being taken after accidents and operation failures or repair work, the average capacity factor of plants in operation fell below 80%, and the share of nuclear power is also at a low level of around 30%. In March 2007, as instructed by the Nuclear and Industrial Safety Agency (NISA) of the Ministry of Economy, Trade and Industry (METI), electric utilities disclosed violation or reportable events that had been systematically covered up. This disclosure has shaken public confidence in nuclear energy activities. Meanwhile, a large nuclear power plant that was affected by the earthquake that occurred last summer is still out of operation. Thus, the current status of nuclear power generation in Japan cannot be deemed to be satisfactory to the public, who expect it to contribute to ensuring a stable supply of energy and coping with global warming.

Furthermore, in April 2007, the town of Toyo in Kochi Prefecture, withdrew its

application for a documentary investigation of the area as a candidate site for geological disposal facility for high-level radioactive waste. This fact suggests that the parties in charge of nuclear policies and the general public have not yet fully understood each other's stance concerning how to ensure the safety of disposal facility and equity in the distribution of benefits from the development of disposal facility. In this context, our efforts should be restructured.

On the other hand, there is encouraging news with regard to the use of plutonium obtained by reprocessing spent fuel as MOX fuel for light water reactors (LWRs) or the plu-thermal project. Although the previous initiatives were suspended due to the revealment of defect in quality assurance activities by fuel manufacturers and inappropriate safety related activities performed by electric utilities, signs of progress have been seen as a result of the subsequent steady efforts of electric utilities and local governments to develop mutual understanding with local residents. The commissioning test of the first commercial reprocessing plant in Japan has been promoted, overcoming initial failures in operational tests using spent fuels, and is currently in the final stage to start full operation.

We can also see progress being made in the use of radiation in the areas of academia, industry and medicine, although we should continue to pay attention to the necessity of maintaining the soundness of facilities for radiation application, assuring safety in handling them, and narrowing the gap in progress between the relevant areas. In the R&D sector, in addition to activities in basic and fundamental research as well as research to achieve the advanced use of radiation, various other activities are also proceeding steadily to explore technologies for nuclear energy supply that are suitable for a society aiming to attain sustainable development—for example, new-type reactors, advanced nuclear fuel cycle facilities and technologies for the use of reactor heat and nuclear fusion energy—so as to select promising candidates for commercialization. Necessary arrangements are also being prepared for the development of personnel who will take charge of nuclear energy activities in the future.

Toward Achieving the Utilization of Nuclear Energy in line with the Expectations of Human Beings

We will never be able to attain sustainable development of our society that is based on advanced technology without overcoming the difficulties that we encounter and appropriately applying the knowledge that we obtained by doing so to the design of new technology design and the managemen of technological systems. In such a grave situation of facing a number of problems to solve in order to carry out nuclear power

generation, the government and private sectors in Japan are required to tackle such problems sincerely with the goal of establishing, in line with the basic concepts for nuclear energy policy specified in *Framework for Nuclear Energy Policy*, a firm regime for promoting the utilization of nuclear energy that will contribute to ensuring a stable supply of energy and coping with global warming. In the course of this, the parties concerned must fully understand their responsibilities for managing risks that are involved in the nuclear power generation as low as practicable and must not forget that public confidence is an essential factor for the process of accomplishing such responsibilities. With this in mind, the AEC will plan, deliberate and decide measures relating to nuclear energy, placing emphasis on the following aspects.

<Aiming to Secure Public Confidence>

In order to gain public confidence, it is necessary for the parties engaged in promoting nuclear power generation to make the public understand not only that nuclear power generation is beneficial to them, but also that the parties concerned consistently and properly carry out risk management activities that are necessary for enabling the public to enjoy such benefits, while taking an objective and impartial viewpoint and making good use of new knowledge and experience in a timely manner. According to the principle of transparency and disclosure as a basic premise, the government and electric utilities should constantly verify, from the public's viewpoint, that their efforts to promote nuclear power generation will bring about benefits to be shared among the public and that they are carrying out risk management activities properly so as to enable the public to enjoy such benefits safely, and should also explain it to communities and citizens in detail. This step is also required for selecting sites for nuclear facilities or promoting food irradiation.

In particular, when selecting candidate sites for disposal of high-level radioactive waste, the government and utilities should enhance their efforts to further develop mutual understanding with the public with regard to the risk management system for disposal, as well as the fact that the disposal sites are of public interest and that, from the perspective of equity in sharing of benefits, the public are required to support the local governments that provide disposal sites in attaining sustainable development.

<Developing Nuclear Energy Systems Resistant to Natural Disasters>

There is an argument pointing out the possibility that as global warming progresses, we may be faced with natural threats beyond the bounds of our knowledge acquired from past experience. As for earthquake, since the occurrence of the Great

Hanshin-Awaji Earthquake, a great amount of academic resources have been poured into geologic and seismic engineering study, leading to the continuous acquisition of new knowledge. In order to carry out nuclear projects smoothly, it is necessary to reflect such new knowledge appropriately—in addition to the operational experience obtained at home and abroad—in the risk management activities. As electric utilities conduct periodic safety reviews every ten years so as to assure the safety of their facilities based on the risk assessment which incorporates most up-to-date knowledge including that obtained through their operations within or outside the facilities, it is possible to maintain the resistance of Japan's nuclear energy facilities to natural disasters through thorough implementation of this review activity. ,Also in this direction, the government requested the owners of nuclear facilities to implement seismic safety assessment (seismic back-check) in light of the Nuclear Safety Commission's Seismic Design Review Guidelines revised in September 2007, while taking into consideration the knowledge obtained at the Kariwazaki-Kashiwa Nuclear Power Plant that experienced an intense earthquake motion beyond the level of design basis earthquake.due to the Nigataken Chietsu-Oki Earthquake that occurred in July 2007. The owners of nuclear facilities should recognize their responsibilities for risk management and conduct the assessment immediately. the government should also immediately evaluate the assessment results in light of the increased knowledge in geology and other academic fields by intensively inputting its resources.

<Promoting R&D Strategically>

In the field of advanced technology R&D, since the performance targets to be attained change with time, it is not recommendable to pursue commercialization of ideas in a phased manner on a single track, but rather it is necessary to encourage the parties engaged in related research fields—i.e. basic or fundamental research, research for system development and research for system commercialization—to learn from one another, and carry out research projects more strategically in a spiral process in which they create innovations and then review the feasibility that the performance targets may be satisfied by the innovation. In particular, in large-scale R&D projects on FBR cycle technology and nuclear fusion, as well as projects on cutting edge nuclear technology such as particle beams, strategic measures should also be pursued by effectively utilizing simulation technology, which is rapidly improving in performance, and constructing large-scale research facilities, which require a lot of money and time for construction, and making such facilities available worldwide through international cooperation so as to achieve effective and efficient use thereof.

<Taking Active Approaches to International Trends Concerning Nuclear Energy>

Japan should continue to actively participate in international initiatives aimed at achieving the peaceful use of nuclear energy as well as ensuring nuclear nonproliferation and security. Toward other countries that are planning to use nuclear energy as a measure to cope with global warming, Japan should take active approaches through bilateral or multilateral frameworks to demand their compliance with the relevant international rules, so that they will promote their plans while assuring nuclear safety, security and nonproliferation. At the same time, Japan should support these countries in developing the necessary infrastructure, including regulatory authorities, industrial organizations and human resources, by providing them with the know-how that Japanese electric utilities and manufacturers have accumulated to date through their successful experience of constructing nuclear power plants exclusively for peaceful purposes. Furthermore, considering that talents and R&D resources are now utilized beyond national borders, Japan should actively make use of the frameworks for international cooperation in order to develop next-generation nuclear technologies that will be effective in safety assurance, nuclear nonproliferation, efficient use of resources and reduction of environmental burden, and helpful to attain sustainable development for human beings.

Conclusion

While cooperating with relevant administrative authorities and hearing opinions from a wide range of sectors including nuclear experts, local inhabitants, local governments and NPOs, the AEC will strive to achieve steady progress in the research, development and utilization of nuclear energy in Japan, in line with the public's interest. To this end, focusing on the issues described above, the AEC will conduct evaluation of the related nuclear policies from the public's viewpoint, and make recommendations to improve and upgrade such policies. The ACE will greatly appreciate support and cooperation from you, including your thoughtful criticism and advice.

Taking this opportunity, the ACE wishes you happiness and prosperity this year.