Remarks from Mr. Zhang Huazhu, Chairman of China Atomic Energy Authority, to the Fourth FNCA Ministerial Conference

December 3, 2003

Distinguished Chairperson, Ladies and Gentlemen,

It is my great honor to be invited to the current FNCA Ministerial Conference. At the outset, please allow me, on behalf of the Chinese Delegation, to extend warm congratulations on the convening of the conference, and express heartfelt appreciation to the Japanese Government for supporting and organizing the conference and greetings to all representatives.

This conference provided us an opportunity for introducing to each other the nuclear energy development of respective countries and exploring cooperation. Now I would like to share my views on the following issues.

1. Development and Prospects of the International Nuclear Power Market

Nuclear power has had a history of more than 50 years ever since the American EBR-1, the first nuclear facility, generated electricity in December 1951, and USSR's first nuclear power plant began to transmit electricity to the power grid in June 1954. In the past half a century, nuclear power experienced three stages including testing and demonstration, rapid development and slowing down. The successful construction and operation of different prototype nuclear power reactors in the 1950s and the 1960s verified the feasibility of large-scale industrial development of nuclear power in terms of engineering technology, safety and economy. After that, rapid development rate of nuclear power had been maintained for more than a decade until the accidents of US's Three Mile Island nuclear power plant and the USSR's Chernobyl nuclear power plant seriously frustrated it across the world, and public acceptance became one of major obstacles. Ever since the late 1980s, nuclear power has been in slow development and was even suspended in some countries.

After the two accidents, countries adopted a series of measures in design standards and approval procedures to improve safety of nuclear power plant. As a result, the construction cycle of nuclear power plant was prolonged, investment increased and its economic competitiveness declined. The increased investment risks discouraged the investors and effected the further development of nuclear power.

The new century, however, brought new opportunities. Though facing with considerable resistance, the US, France, Russia and other countries have shown the determination to continue the development of nuclear power. Asian countries, too, have demonstrated outstanding development momentum in this field. The rapid

economic growth in Asia since the latter half of last century has presented increasing demands on power construction. The comparative shortage of primary energy in this region provides development space for nuclear power. And besides, this region has kept good record of nuclear power operation and enjoyed better public acceptance than developed European countries. Countries such as China, Japan, the Republic of Korea, India, Pakistan and Vietnam are wiling to expand their nuclear power production capacities or plan to develop nuclear power, making Asia the most eye-catching region in the world's nuclear power development.

2. Development Prospect of Nuclear Power in China

China's nuclear power development is an important part of Asia's nuclear power development. China's total installed power capacity reached 356 GW in 2002 and it is ranked the second in the world in terms of annual power output and installed capacity. As a large country with a population of 1.3 billion, China is still insufficient in electricity supply with an installed capacity per capita of 0.27 KW, ten times lower than many developed countries. The present energy mix is far from rational. The national total power generation reached 1654.2 TWH, of which the output of thermo power accounted for 81.74%, hydro power 16.6% and nuclear power a mere 1.6%. Optimizing the energy mix will be an important mission in order to meet the requirements of environmental protection and sustainable development. According to the general economic development strategy, China's GDP will redouble by 2020. The power industry needs to grow at an estimated annual rate of 5% to meet the requirements of the national economic development. The total installed power capacity shall exceed 800 GW by 2020. In addition to hydro and wind, nuclear power will take an important position in the growth as a kind of clean energy. The total installed capacity of nuclear power will reach 32,000 MW if nuclear accounts for 4% of the total by 2020. In other words, about 20 nuclear power units of 1000 MW are to be constructed. This shows that China's nuclear power is entering a new ear of development.

3. Development of Nuclear Technology Application in China

Mr. Chairperson, we have noted that "the effect of nuclear technology on social and economic development" is one of the themes of this FNCA ministerial conference. It is evident that applications of nuclear technology in fields other than power generation are making robust development, and playing increasingly important, indispensable role in the social and economic development. In China, in the sector of industry, various radiation appliances and nuclear instruments are widely used in production, process control, non-destructive inspection, chemical analysis, resource prospecting, etc., and have yielded remarkable social and economic benefits. In agriculture, nuclear technology is playing positive roles in irradiation breeding, soil

improvement, insect's sterilization, keeping food fresh, and increasing the reproductivity of livestock. Nuclear medicine, another important field of nuclear technology application, has taken a great step forward. The increasing application of nuclear medical equipment, appliances and medicine in radioactive diagnosis and radiotherapy has done contribution to the health of the mankind. Nuclear technology is also demonstrating growing importance in environmental protection and water management.

Statistics show that traditional industries with application of nuclear technology yielded an output of $2 billion in 2002, accounting for around 0.16% of GDP. Among this, the output of nuclear agriculture was $500 million, radioactive chemical products $400 million, isotope instrument $375 million, ?-ray irradiation products $690 million, and isotopes and their products $ 50 million. Nuclear technology application has become an important component of China's social and economic development. We admit, however, there is still a big gap between China and developed countries in this aspect. Materials show that the output associated to nuclear technology applications in the US and Japan respectively accounted for 5% and 2% of GDP in 1997. China still needs to further improve the application level of nuclear technology and promote its industrialization through necessary international cooperation. We wish FNCA would facilitate practical cooperation among member countries in this field to make contribution to the improvement of nuclear technology application level of this region.

Ladies and Gentlemen,

It is the common aspiration of people of the whole world to protect the environment and our globe and promote the sustainable social development. The limited reserve of fossil fuel and the environmental issues caused by its usage has aroused wide attention. The development and applications of nuclear energy, a kind of clean energy, provides practical means to settle these issues effectively, and will play its role in realizing "environmental protection and sustainable development".

Mr. Chairperson, "promoting the development and application of nuclear energy and nuclear technology in this region" is the basic principle of this Forum, to the common understanding of member countries. In the past a few years, a lot of beneficial cooperation were carried out focusing on 8 technological fields including the application of research reactors, making positive contribution to the development of nuclear energy and nuclear technology of this region. The Chinese Delegation highly commends it. We would also like to propose the combination of cognitive and concrete aspects of the Forum, to discuss the nuclear cooperation policies and

directions on the one hand, and carry out cooperation on nuclear application technology to meet the demands of nuclear technology development in this region on the other. Only through this way can FNCA gain wide recognition and support. China, along with other developing countries, is facing economic and technological challenges in energy development and environmental improvement. We wish to have wide-ranging exchange and cooperation with other Asian countries in nuclear energy development and technology applications to make due contribution to environment protection and sustainable economic development of Asia and even the whole wo rld.

Thank you.