Technology and Human Resource Development in the Area of Nuclear Nonproliferation and Nuclear Security to Support Peaceful Use of Nuclear Energy

The Japan Atomic Energy Agency (JAEA) is conducting the following technology and human resource development activities related to nuclear nonproliferation and nuclear security, in cooperation with relevant domestic and overseas organizations (Fig.12-1).

Nuclear Nonproliferation Technology Development for Japanese and International Applications

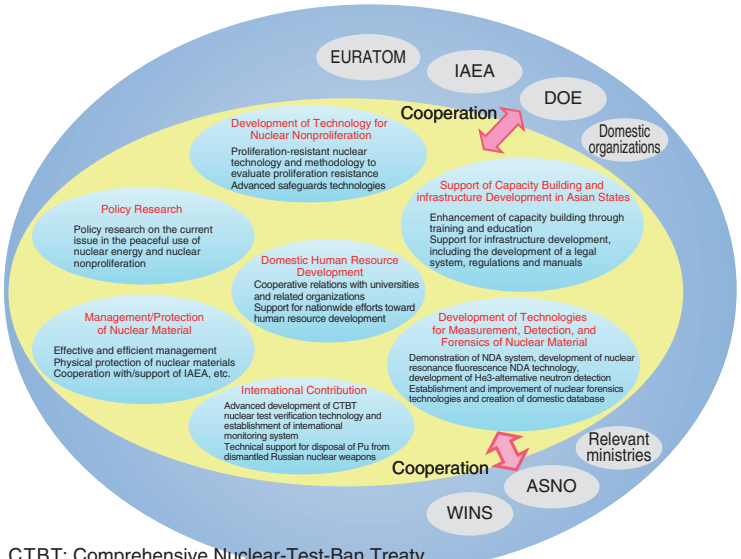
We have been developing proliferation resistant nuclear technologies, methodologies for evaluating proliferation resistance, and advanced safeguard technologies through cooperation with international partners such as the U.S. Department of Energy (DOE). In February 2013, we commemorated the twenty-five year anniversary of cooperation with the DOE in the field of nuclear nonproliferation. On the occasion of an annual bilateral meeting, the JAEA was presented with a medallion with a message from Daniel B. Poneman, Deputy Secretary of Energy, which expresses his appreciation and gratitude for the JAEA's cooperation in this field (Fig.12-2).

Development of Measures to Account for and Control Nuclear Material in Response to the Accident at 1F

We are examining the technologies applicable to the nondestructive measurement of nuclear material that remains within the molten core of the reactors at Tokyo Electric Power Company, Incorporated Fukushima Daiichi Nuclear Power Station (1F). As one such candidate technology, we are developing a technology for measuring nuclear material using γ-rays emitted by fission products accompanying nuclear material (Chapter 1, Topic 1-16).

Contributions to the International Community Based on Our Expertise and Experience

With respect to activities relating to the Comprehensive Nuclear-Test-Ban Treaty (CTBT), we operate radionuclide monitoring stations and other related facilities, and thus contribute to the establishment of an international monitoring system for the detection of nuclear tests. The JAEA's activities in this area attracted international attention when radionuclides that are suspected to originate from the nuclear test announced by North Korea in February 2013 were detected in April at Takasaki Radionuclide Monitoring Station.



CTBT: Comprehensive Nuclear-Test-Ban Treaty
WINS: World Institute for Nuclear Security
ASNO: Australian Safeguards and Non-Proliferation Office
D O E: Department of Energy

Support for Government Policy Formulation Based on Our Expertise

As a think tank in this area, we conduct research on measures to ensure nuclear nonproliferation and nuclear security on the backend of the nuclear fuel cycle.

Strict Management of Nuclear Material at Our Own Facilities and Utilization of the Experience Gained from Management of Nuclear Material

We strictly manage the nuclear material that the JAEA possesses. Moreover, we assist in increasing the efficiency of inspections by providing technical support to the Japanese government and the International Atomic Energy Agency (IAEA). We also provide support to the IAEA in the field of physical protection and respond appropriately in the event of revisions to the domestic legislation in this area.

New Efforts toward Nuclear Security

On the basis of commitments made by the Japanese government at the Nuclear Security Summit in April 2010, we established the Integrated Support Center for Nuclear Nonproliferation and Nuclear Security (ISCN) in December 2010 and began conducting its mission of capacity building and infrastructure development, focusing on the Asian region.

Approximately 630 participants (approximately 430 from Asian states) participated in the training courses on nuclear security and safeguards and other activities organized by the ISCN in FY 2012. We are proud of the contributions that we are making in the area of capacity building in primarily the Asian region.

Furthermore, we are conducting research on and development of the technology on the measurement of nuclear material, which will contribute to the advancement of accounting for and control of nuclear material, as well as the technology on nuclear detection and forensics technology in cooperation with the United States. We will continue to provide support to the Japanese government in the area of international contributions by establishing accurate technologies and sharing these technologies with the international community.

Fig.12-2 Medallion to commemorate twenty-five year anniversary of cooperation between JAEA-DOE in the area of nuclear nonproliferation presented by DOE

Fig.12-1 JAEA activities in development of science and technology for nuclear nonproliferation
We have two primary missions: to support the government in developing nuclear nonproliferation policies through research and study, and to support government and international organizations by developing nuclear nonproliferation technology. In addition, we appropriately implement the management of nuclear material and the development of related technology and conduct capacity-building activities.