FNCA
Forum for Nuclear Cooperation in Asia
Newsletter
No. 15
March 2012

Contents

The 12th FNCA Ministerial Level Meeting
December 16th, 2011, Tokyo, Japan

The 12th Ministerial Level Meeting (MM) of the Forum for Nuclear Cooperation in Asia (FNCA) was held at the Mita Conference Hall in Tokyo, Japan on December 16, 2011, and hosted by the Japan Atomic Energy Commission and the Cabinet Office of Japan. The Meeting was attended by ministerial level representatives (5 ministers, 2 vice ministers, the directors of the nuclear administrative agencies) from 12 member countries: Australia, Bangladesh, China, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, The Philippines, Thailand, and Viet Nam

The Hon. Mr. Goshi HOSONO
Minister of State for the Nuclear Power Policy and Administration of Japan

(1) Opening

The Hon. Mr. Goshi HOSONO, Minister of State for the Nuclear Power Policy and Administration, Cabinet Office of Japan, delivered the welcoming remarks, in which he expressed his sympathy for Thailand on the extraordinary flood and his appreciation for the support for the accident at TEPCO's Fukushima Daiichi Nuclear Power Plant. It was announced that the government will report the cold shutdown status of the plant on December 16 as the plant is in stable state and will conduct decontamination activities as well as decommissioning activities in the mid-to-long term. Mr. HOSONO introduced observation of decontamination activities, devastation / remediation caused by earthquake and tsunami, and the situation of reconstruction in Fukushima Prefecture for accurate understanding of FNCA member countries. Mr. HOSONO also related that FNCA could play more important role in terms of enhancing safety, infrastructures and sharing information as the utilization of nuclear energy will expand around the world in addition to further enhancement of the FNCA activities.

Dr. Shunsuke KONDO, Chairman of Japan Atomic Energy Commission (JAEC), proposed the agenda of the meeting and it was adopted.

(2) Country Reports

Each of the twelve participating countries delivered their Country Report, focusing on public opinion about nuclear energy, the current status and future plan of nuclear power generation, and radiation application as well as the suggestion to enhance FNCA activities. See pages 3-5 for the reports summary.

(3) Reports of FNCA Activities

○ Project Activities

Dr. Sueo MACHI, FNCA Coordinator of Japan, reported the overview and the progress of FNCA Projects including closed in fiscal 2010 and new projects from fiscal 2011, and proposed the Work Plan. The MM accepted the report.

○ Report of the 3rd Panel Meeting

Dr. Akira OMOTO, Commissioner of JAEC, reported the summary of the 3rd meeting of "the Study Panel on the Approaches towards Infrastructure Development for Nuclear Power" held in Jakarta, Indonesia in July 2011, in his capacity as the Panel Chairperson. See pages 17-18 for the meeting summary.

Delegates of Member Countries

(4) Special Session: The accident of TEPCO's Fukushima Daiichi Nuclear Power Plant

Dr. Akira OMOTO reported the lessons learned from the accident concerning enhancement of nuclear safety, safety regulation, safety culture, and workable and effective management against severe accidents, and emergency management. Mr. Junichiro ISHIDA of Japan Atomic Energy Agency (JAEA) reported the decontamination activities being conducted by JAEA aiming environmental restoration of Fukushima. Mr. Noriyuki SHIKATA, Deputy Cabinet Secretary for Public Affairs, reported the risk communication efforts taken by Global Communications Office of Prime Minister since the occurrence of the accident. The MM shared the view that transparency, sharing international information and international cooperation including International Atomic Energy Agency (IAEA) were important.

(5)Round Table Discussion 1: Infrastructure Development (HRD and Public Information)

Dr. Kibog LEE, Director of Nuclear Education and Training Center of Korea Atomic Energy Research Institute, introduced the Korean activities for developing the infrastructure. He pointed out the importance of networking the existing activities for education and training in global community as synergy effects can be expected from the networking. Secondly, Ms. Etsuko AKIBA, Commissioner of JAEC, introduced the results of the Japanese public opinion survey on nuclear-utilization and grass-roots activities for public information about energy policy in Japan. She pointed out the importance of interactive communication among experts and general public. Dr. Sueo MACHI introduced the direction and challenge of the FNCA Infrastructure Development Projects, which are Safety Management Systems for Nuclear Facilities, Radiation Safety and Radioactive Waste Management, Human Resources Development, and Nuclear Security and Safeguards. The Chairman concluded the session, emphasizing the importance of continuous efforts to remove the fear for nuclear energy.

(6)Round Table Discussion 2:Cooperation for Further Promotion of Radiation and Isotope Application

Dr. Sueo MACHI proposed in his lead speech that the efforts should be enhanced in the technology transfer of FNCA projects not only to the people in nuclear field but also to the end-users in the fields of agriculture, medical service and other industries. He concluded his talk, expressing his expectation that new host countries will start FNCA projects. In response, Malaysia expressed the support for the whole activities. Indonesia expressed the interest in research reactor network, and the Philippines expressed the interest in the projects of agriculture, cyclotron and nano-technology.

(7)Meeting Resolution

Dr. Shunsuke KONDO introduced a draft resolution of the 12th FNCA Ministerial Level Meeting. The MM discussed the draft resolution and adopted it after minor modifications. The followings are the points of the Meeting Resolution.

- Further enhancing cooperation in the field of nuclear safety with a view to applying the highest standards thereof to nuclear facilities in FNCA countries, renewing our recognition that major nuclear accidents can have significant international consequences.
- Sharing knowledge about effective management of natural hazards, such as earthquake, tsunami and volcanic eruption, and lessons learned from the accident at TEPCO's Fukushima NPP to ensure the highest safety of nuclear facilities in the region.
- Cooperating to establish sound nuclear infrastructure such as nuclear safety, security and safeguards/non-proliferation, including through the activities under the FNCA projects
- Promoting practical applications in international society by end-users of the remarkable outcomes of the FNCA projects in the healthcare, agriculture, industry and environmental fields, by strengthening cooperation and linkages with relevant governmental and private sector bodies, as well as enhancing information dissemination to end-users.

(8) Closing

Dr. Shunsuke KONDO gave a short closing speech and the FNCA member countries agreed on the offer of Indonesia to host the next FNCA Ministerial Level Meeting in Jakarta in 2012.

(9)Observation of Decontamination Activities (December 17th, 2011)

On the next day of the MM, December 17, the delegates of each country including the four Ministers observed decontamination activities in Minami-Soma, Fukushima Prefecture and damage by tsunami and earthquake around Tohoku Electric Power Company's Haramachi Thermal Power Station in Minami-soma, to share the most recent information on the decontamination activities and learn huge impact of the tsunami and earthquake as natural hazard.

Observation of Decontamination Activities in Fukushima

(10)Special Session on Human Resource Development in Senior Officials Meeting (December 15th, 2011)

On the day before the MM, December 15, the Senior Officials Meeting was held and a special session was served to discuss human resource development (HRD) inviting Dr. Yanko YANEV, Head of Nuclear Knowledge Management Unit International Nuclear Information System(INIS) & and Nuclear Knowledge Management (NKM) Section, Department of Nuclear Energy, IAEA, where the activities on HRD in IAEA and FNCA were introduced and the current status, the challenges and the future issues of HRD were discussed.

Summary of Country Reports

Presented at the 12th Ministerial Level Meeting

Australia

The Australian Government maintains the position that it does not foresee the introduction of nuclear power in Australia. However, it accepts that nuclear power is an important part of the energy mix in some countries where energy resources are limited and energy demand is growing strongly. The government continues to support uranium mining subject to rigorous environmental and safety considerations. The Federal Government has recognized the importance of nuclear science and technology in Australia through funding for new neutron research instruments at the OPAL research reactor facility in Sydney and the establishment of a Centre for Accelerator Science where two new accelerators are under construction in addition to existing two accelerators. Australia values its role as a member of the FNCA and affirms its support to the Forum's program, which facilitates the application of nuclear science and technology in a safe, secure and safeguarded manner.

The Hon. Dr. Ronald HUTCHINGS
Head, International Relations
Australian Nuclear Science
&Technology Organisation

Bangladesh

Bangladesh government is building Rooppur Nuclear Power Plant (RNPP) to meet the rising demand for power for materializing the "Vision 2021" in which electricity production of 8,500 MW by 2013, 11,500MW by 2015 and 20,000MW by 2021 are defined as the target. In the project top priority is given to the issues of radiological protection, nuclear safety and security in implementation of nuclear power program in Bangladesh. At present, Bangladesh Atomic Energy Commission (BAEC) has the responsibilities of the RNPP program, but Nuclear Power Authority of Bangladesh (NPAB) will be established in future. Bangladesh expects support from the FNCA to develop nuclear infrastructure, especially in developing human resources in the fields of nuclear science and technology and also for improving the capacity of the project management team. Bangladesh is serious in improving the nuclear safety infrastructure and safety culture and the country wishes to get support from the FNCA in this regard.

The Hon. Mr. Yeafesh OSMAN
State Minister
Ministry of Science and Technology

China

China has always adhered to the principle of "Safety First" during nuclear power development. After the Fukushima nuclear accident, competent authorities have immediately organized thorough safety inspections for all nuclear facilities, strengthened safety regulations on operating nuclear facilities, and carried out safety assessment of all nuclear power plants under construction against on latest standards. As application of nuclear technologies can bring remarkable economic and social benefits for all countries, it is of significance to promote and expand regional cooperation in this field. China is willing to share experience with all member states under the FNCA framework in nuclear medicine, agriculture and radiation application and other fields, and promote the common progress of all member states. China is willing, hand in hand with all member states, to strengthen communication and cooperation, share our experience in nuclear power development, and promote the healthy and sound development of nuclear power in member states.

The Hon. Mr. ZHANG Huazhu
Senior Advisor to current Chairman of China Atomic Energy Authority,
Vice Chairman of Science and Technology Committee of CAEA,
Chaiman of China Nuclear Energy Association

Indonesia

Nuclear Science and Technology (NST) have been strongly recognized and involved in at least three focuses, those are food and energy securities and health. Indonesia foresees the significant impacts of those three for welfare of Indonesia people. Regarding the application of NST for electricity, a comprehensive survey (public pooling) done in November 2010 showed almost 60% agreed NPP. However, after Fukushima Daiichi Accident (FDA), the national survey carried out in November 2011, showed 49.5% agreed, 35.5% not agreed and 15% abstain. After FDA, the promotion of NPP to public through media campaign, stakeholder involvement and community development is done through slow motion strategy. Study panel of NPP Infrastructure Approach on Financing Matter is preferred to be held. The HRD is still a general problem among all of FNCA member countries, so that the HRD project should be taken into account as the first priority among other FNCA projects. As a whole, Indonesia is very supportive to deal with all activities among FNCA countries based on mutual benefit manner.

The Hon. Prof. Dr. Gusti Muhammad HATTA
The State Minister for Research and Technology
The Ministry of Research and Technology of Indonesia

Japan

Japan has been promoting the research, development and utilization of nuclear energy for the past fifty some years, limiting them to peaceful purposes. The Great East-Japan Earthquake and the resulting tsunamis that struck the Fukushima Daiichi Nuclear Power Plant operated by the TEPCO on March 11th this year brought about serious consequences on the nuclear energy utilization in Japan. The fact that this accident has raised concerns around the world about the safety of nuclear power generation is a matter we take with the utmost seriousness and remorse. We determined to trace the causes of the accident thoroughly and provide the international community with all relevant information promptly and accurately. We have already sent to the IAEA two reports.

We have also started a comprehensive review of energy and environmental policy, taking into consideration the recent accident, aiming at deciding on Japan's desirable medium- to long-term energy composition by around the summer of 2012. Meanwhile, many countries around the world have seriously explored the use of nuclear energy as a measure to achieve energy security since the accident. Japan has been firmly behind the FNCA and would like to support the effort of capacity building including HRD of member countries. Japan will also continue to cooperate with countries in Asia for the advancement of nuclear science and technology and the effective utilization of such advancement including nuclear power generation for human health and socio-economic development in each country.

Dr. Shunsuke KONDO
Chairman
Japan Atomic Energy Commission

Kazakhstan

Kazakhstan during two decades following independence has been conducting a consistent policy for the expansion of peace application of nuclear energy. The Program of atomic branch development in the Republic of Kazakhstan for 2011-2014 with perspective up to 2020 was adopted by the governmental decree 29 June 2011. In his report on the International conference "For Nuclear-free World" (Astana, 11 October 2011) President of Kazakhstan, Nazarbaev N. has mentioned that Kazakhstan is among the states carrying on investigations in the field of peace application of nuclear energy, and is going to construct nuclear power stations. Kazakhstan became a member of FNCA in 2010. During this period our organizations engaged with nuclear activity had joined many projects.

We are waiting a lot from the collaboration with the organizations from FNCA member countries.

The Hon. Dr. Erlan G. BATYRBEKOV
First Deputy Director General
National Nuclear Center

Korea

As the Korean President LEE, Myung Bak announced at the UN nuclear safety meeting in September, based on the 4th Comprehensive Nuclear Energy Promotion Plan, Korea will construct six additional nuclear power plants with maximum level of safety by the end of 2017.

Korea will enhance international reliability as a nuclear export country by successfully completing Jordan research reactor and UAE nuclear power plant and fulfill its international role through supporting infrastructure development of developing countries. In addition, Korea confirmed the construction of a new research reactor for radio-isotope production, planned to perform additional R&D for safety improvement of a multi-purpose Small Modular Reactor, SMART, and will continuously perform its R&D on fuel cycle by relating SFR and Pyro-Processing.

We hope FNCA will continue to contribute to the peaceful use of nuclear energy in Asian region through mutual understanding and cooperation among members. Korea will also fulfill its role as a member country.

The Hon. Dr. CHOI Jong Bae
Director General
Space and Nuclear Technology Bureau
Ministry of Education, Science &Technology

Malaysia

Malaysia is currently undertaking the prerequisite detailed studies prior to any decision to implement nuclear power projects. The Fukushima accident has shaken public confidence in the safety of nuclear activities. Malaysia has always recognized the importance of regional cooperation and has participated actively in projects under the FNCA multi-lateral framework. In continuation of this, Malaysia proposes the following matters be considered for future activities of the FNCA, namely : i) Consistently support the initiatives of FNCA Panel Meeting on Nuclear Infrastructure, ii) Revisit and give a high priority to the existing project on public information, iii) Optimize and continue a regional (ASEAN+3) discussion on the possibility of multilateral approach on nuclear fuel cycle and nuclear waste management, iv) Continue and further strengthen the existing HRD programs under ANTEP at established, v) Increase sharing of R&D and training facilities, collaborations and job attachments, vi) Establishing a regional project to study the socio-economic impact of nuclear technology in parallel with the development of NPP.

The Hon. Mr. Fadillah Bin YUSOF
Deputy Minister
Ministry of Science Technology and Innovation of Malaysia

Mongolia

"State Policy of Mongolia on the exploitation of radioactive minerals and nuclear energy" provides that the exploitation of radioactive minerals and nuclear energy should play an important factor for sustainable development and national security of Mongolia to improve living standard of its people, producing low-cost electricity and heat. In the framework of the state policy, the Nuclear Energy Agency carries out several activities, including the development of international cooperation with FNCA's member state. Nuclear accident at the Fukushima Daiichi NPP, compel us all to look once again at the measures that are necessary to ensure utmost safety and security at NPPs and other nuclear facilities. As the issues are important for all countries, especially for those seeking nuclear power or other peaceful uses of nuclear energy, The report to this Ministerial Meeting points out that to be more effective there is a need to further contribute to the FNCA Cooperation and other sources so as to advance the goals, programs and concrete cooperation projects.

The Hon.Ms.Gantuya DULAANJARGAL
Officer of International Cooperation Development
Nuclear Energy Agency of Mongolia

The Philippines

The Philippines was seriously considering the inclusion of nuclear power as part of the energy mix. The occurrence of the Fukushima Daiichi accident behooves the Philippine Government to undertake a very thorough study of nuclear power. This would include activities that would permit sharing of knowledge of effective management of natural hazards and lessons learned from the Fukushima accident, the establishment of the necessary infrastructure for nuclear safety, and human resource development. We look forward to collaborating in the development of new strategies to enhance public information and education on nuclear energy including effective strategies to communicate nuclear-related risks to the public. We urge the FNCA to re-activate its project on public information.
The ongoing FNCA projects on non-power applications of nuclear energy are related to Philippines' efforts to harness nuclear science and technology in national development. The Philippines supports the new FNCA project on nuclear safeguards and security.

The Hon. Mr .Mario G. MONTEJO
Secretary (Minister)
Department of Science and Technology of the Philippines

Thailand

As the Thai Government has postponed the decision on the embarkation of the nuclear power program for three years, as a result of the Fukushima accident, closer attention would now be paid to further study and research and knowledge dissemination to public in order to ensure the highest level of safety standards and public acceptance. Even though some of the international events in Thailand have been postponed due to the widespread flood in Thailand, we reiterate our intention and works closely with our counterparts to reschedule the events.
Thailand has benefitted from close cooperation with our friends from FNCA countries in various areas, such as public health, agriculture and industry all of which are vital for our national sustainable development. As a member country, the Government of Thailand is pleased to fully support and contribute to the FNCA at our best for socio-economical benefits in our region.

The Hon. Dr.Plodprasop SURASWADI
Minister
Ministry of Science and Technology of Thailand

Vietnam

The policy on nuclear energy development in general and on nuclear power development in particular has been clearly defined through the Strategy for peaceful Utilization of Atomic Energy up to 2020, the Oriental Plan on Nuclear Power Development up to 2030 and Planning for National Electricity Development for the period of 2011-2020 with consideration up to 2030, in which the first nuclear power plant will be in commercial operation in 2020 and the share of nuclear power will reach 10.1% of the total power generation in the year 2030.Deeply understanding the importance of nuclear safety and the role of the country in nuclear safety, the Government is focusing on investment for developing and improving nuclear infrastructure, including law and regulation system, strengthening capacity for nuclear regulatory body, developing technical support organization and enhancing international cooperation on nuclear safety. Vietnam has participated in all FNCA projects and values the importance and the contributions of FNCA activities in promoting the peaceful uses of nuclear energy. Vietnam looks forward to the cooperation in sharing, exchanging information, building nuclear power infrastructure, human resources development

The Hon. Dr. LE Dinh Tien
Deputy Minister
Ministry of Science and Technology of Vietnam

Introduction of 10 On-going FNCA Projects

Radiation Utilization Development
Industrial/Environmental Utilization

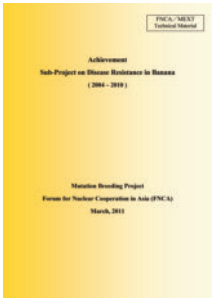
Mutation Breeding Project

The goal of this project is to contribute to the increase of food production and improvement of food quality in Asian countries, by promoting the use of radiation mutant breeding technology (gamma rays, ion beams, etc.) to develop new mutant varieties of key crops like rice, bananas, orchids, soybeans and sorghum that can better resist drought, insect and disease.

Insect Resistant Orchid Developed by Malaysia
(Left: Improved Variety, Right : Parent Variety)

Recent Project Achievement

The sub-project "Disease Resistant in Banana" began in fiscal 2004. Its aim was to develop new varieties of bananas resistant to the fusarium wilt disease and the banana bunchy top virus that had seriously damaged banana production. The sub-project had been successful in producing new mutant lines that were resistant to these diseases and it was terminated in 2010. It is expected that the mutant lines will be registered and disseminated in each country in the future. Furthermore, special propagating and culturing techniques for bananas were developed through research activities, and technologies were successfully transferred to private companies in Malaysia etc.



Achievement Report of Sub-Project on Disease Resistance in Banana
(You can download at FNCA Website http://www.fnca.mext.go.jp/english/mb/drb/e_drb.html)

Workshop Outline

- Period: February 20 to 23, 2012
- Venue: Bangkok (Thailand)
- Number of participants: 14

(Bangladesh, Indonesia, Japan, Korea, Malaysia, Mongolia, The Philippines, Thailand, Vietnam)

At the workshop, participants from each country reported and discussed mainly on quality improvement and compositional modification in rice. It was confirmed that each country has obtained mutant lines which were suitable to their particular needs in terms of salinity tolerance, drought tolerance and better yields by using gamma rays, ion beams and etc.

In the discussion on future plans, it was confirmed that from 2013, activity will be centered around a new theme "Mutation Breeding for Sustainable Agriculture". An idea was also entertained in which experts in mutation breeding from each country, not only those individuals specializing in rice, hold a two-day opened symposium at the workshop in fiscal 2012. In addition, at the discussion on the collaboration with International Atomic Energy Agency (IAEA)/Regional Cooperation Agreement for nuclear science and technology R&D and training (RCA), it was suggested that once every few years RCA and FNCA hold workshops at the same time to have a discussion.

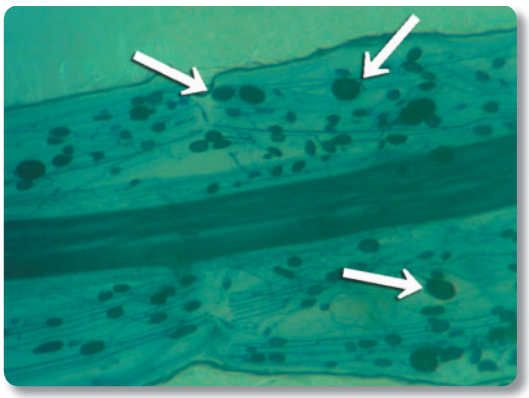
On the final day, participants visited the Nuclear Technology Research Center at Kasetsart University. First, they were briefed on the center, and then they observed the gamma irradiation facilities, and finally were introduced to mutant varieties of orchids and cannas that were developed at the center.

Workshop

Visiting the Nuclear Technology Research Center of Kasetsart University

Biofertilizer Project

Soil contains a large number of microorganisms that are useful for growth of plants, such as rhizobia, which live with plants and supply nitrogen as an essential nutrient to plants, and mycorrhizal fungi, which help absorbing phosphorus. The purpose of this project is to contribute to promoting environment-friendly and sustainable agriculture in the Asian region by developing biofertilizers in which carriers* are sterilized with radiation for cleaning up other unwanted microorganisms and mixed with these useful microorganisms for growth of plants, and increasing the yields of crops while reducing the environmental burden of excessive use of chemical fertilizers.



Mycorrhizal fungi Living in the Root of Plant

Recent Project Achievement

To produce biofertilizer carriers using the radiation sterilization technique, it is important to form close cooperation between a nuclear research institute having a radiation facility and an agricultural research institute studying biofertilizers. The cooperation in this project has been strengthened, and the carrier radiation sterilization technique is being transferred to the private sector. In Indonesia and Malaysia, biofertilizers using radiation sterilization are already in widespread use across the countries.

Biofertilizer in Malaysia Using Radiation Sterilization

Workshop Outline

- Period: September 27 to 30, 2011
- Venue: Ulaanbaatar (Mongolia)
- Number of participants: 22

(China, Indonesia, Japan, Malaysia, Mongolia, The Philippines, Thailand, Vietnam)

At the workshop, summaries of research activities in the current phase were reported by the participating countries. In addition, lively discussions were held on: 1) Development of biofertilizers for increasing crop yields and a strategy for further spreading them to farmers, 2) Expansion of use of radiation facilities for producing biofertilizers for commercial use, 3) Prospects of development of multifunctional biofertilizers that suppress plant diseases while promoting the growth of plants, 4) Synergy between biofertilizers and a plant growth promoter oligochitosan, and 5) Development of an "FNCA Guideline for Biofertilizer Quality Analysis," which are important tasks in biofertilizer research and development.

Further, a discussion was held on specific activities to be conducted in the next phase starting in fiscal 2012, and agreements were made on activities such as evaluation of survival ability of microorganisms for biofertilizers, publication of the "FNCA Guideline for Biofertilizer Quality Analysis" on these microorganisms and quality control in 2012, and development of a radiation breeding technique for developing multifunctional biofertilizers.

Workshop

The participants visited the Mongolian State University of Agriculture (MSUA) to check the types of crops, seasons for seeding and harvesting, fertilizers used and contents of studies conducted in Mongolia, and inspect the soil chemical analysis laboratory, microbiology laboratory, etc. in the university.

Visiting Mongolian State University of Agriculture

* Carrier: A material for retaining and breeding microorganisms; peat, compost and etc. are used as carriers.

Electron Accelerator Application Project

In this project, research activities have been conducted with the objective to promote practical application of products that benefit the participating countries in efforts to expand use of electron accelerators*1 and gamma rays in the industrial field. Information and experiment data are shared with the IAEA/RCA and it is expected to be made a synergy effect. Currently, research and development of plant growth promoters and super water absorbents for soil conditioning for users in the agricultural field has been conducted.

Recent Project Achievement

Radiation processing of natural polymers*2 enables production of highly active plant growth promoters and super water absorbents for soil conditioning. Through field tests conducted in the respective countries, it has been confirmed that a chitosan-based plant growth promoter depolymerized by radiation improves the disease resistance of plants due to the stimulant's antifungal effect, and increases yields of vegetables, soybean, rice, fruit, etc. In Vietnam, plant growth promoters derived from chitosan have already been commercialized, and used for production of vegetables, coffee, etc. In Japan, this type of plant growth promoters have been put into practical application as plant activators, and used for production of cyclamen, etc. In addition, super water absorbents produced through radiation processing of natural polymers are expected to be used as water retaining agents for soil conditioning in dry regions.

"FNCA Guideline on Development of Hydrogel and Oligosaccharides by Radiation Processing"* was published in October 2009 as a reference of the production of high-quality materials, and has since been effectively utilized for promoting research and development and industrial use in various countries. A list of electron-beam and gamma-ray irradiation facilities in the FNCA participant countries is also posted on FNCA's website.

* Can be downloaded from FNCA's website:
[http://www.fnca.mext.go.jp/project.html]

Workshop Outline

- Period: January 30 to February 2, 2012
- Venue: Manila(The Philippines)
- Number of participants: 15

(Bangladesh, China, Indonesia, Japan, Kazakhstan, Malaysia, Mongolia, The Philippines, Thailand, Vietnam)

With Mongolia and Kazakhstan joining the FNCA in fiscal 2011, presentations and discussions on the progress of research and development of a plant growth promoter (PGP) produced through radiation processing and a super water absorbent (SWA) were made. In addition, since this fiscal year is the closing year of phase 3 (fiscal 2009-2011) activities of the project, a discussion on future progress of the project was held in addition to a general overview of the research findings on PGP and SWA obtained so far.

In an open seminar held before the workshop, with the participation of approximately 40 people from research institutes and the agricultural and industrial fields in the Philippines, there were presentations on a new research plan for using the electron accelerator of the Philippine Nuclear Research Institute (PNRI), and an introduction to a cosmetic face mask, a plant growth promoter and a filter for removing trace metal from semiconductor cleaning solutions, all of which countries including Malaysia, Vietnam and Japan have put to practical application through radiation processing, including a report on the circumstances until their practical application in response to the needs and their features not found in conventional products.

At the workshop, the progress of field tests using PGP derived from chitosan was reported by the respective countries. It has been confirmed as a result of the field tests that yields of vegetables, fruit, rice, etc. increased by approximately 60% at a maximum, and the PGP had effects also in improving quality such as an increase in the number of unbent, straight cucumbers. The Japanese participants reported the progress of research on synergy effects of biofertilizer and PGP that was conducted in cooperation with the FNCA biofertilizer project, and explained that use of PGP in combination with biofertilizer increased the number of root nodules of soybean, indicating the tendency of higher nitrogen fixation ability. The participating countries agreed that they would conduct field tests using rice plant and capsicum, which are crops with high economic effects, and continue to strengthen the collaboration with agricultural research institutes.

Subsequently, the results of a pot test and a field test with SWA that was produced by applying radiation processing to cellulose, cassava starch, coconut fiber, etc., which are natural polymers indigenous to the respective countries, were reported. It was indicated that SWA has high water absorbability and water retentivity, and is effective for agricultural use as a soil conditioner in dry regions. It was decided to press ahead with research and development and information exchange in order to optimize the properties such as water absorption rate and biodegradability and the SWA manufacturing process for field tests.

In addition, it was agreed to formulate guidelines for users of PGP and SWA in order to promote practical application of the achievements of field tests obtained at the workshop.

Workshop

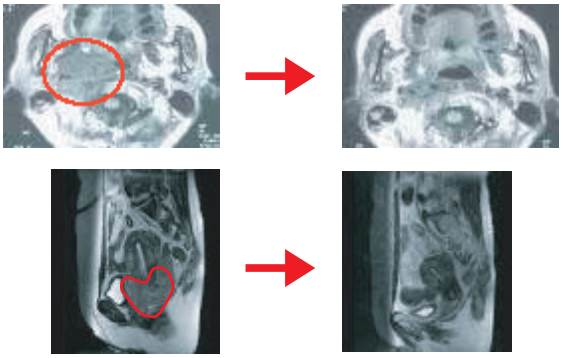
*1 Electron accelerator: An equipment designed to acquire high-energy electron beams by accelerating electrons by applying high voltage to them, and used for radiation processing.

*2 Natural polymers: Naturally produced high-molecular compounds. They include cellulose, protein and chitin-chitosan.

Radiation Utilization Development
Healthcare Utilization

Radiation Oncology Project

The aim of this project is to raise the radiation therapy level in the Asian region and spread the therapy in the region by establishing treatment protocols for the standard radiation therapy methods through joint clinical trials on predominant cancers (cervical and nasopharyngeal cancers) in the Asian region.

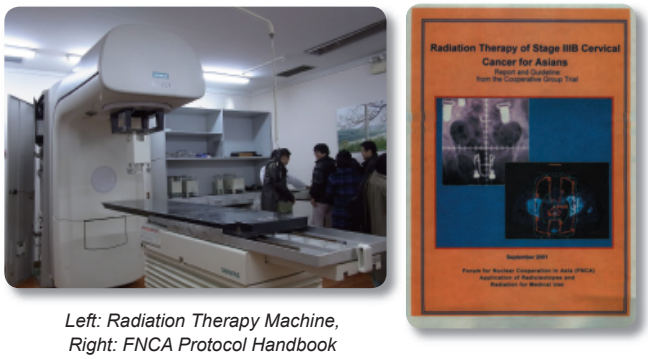


Disappearance of diseased area through chemoradiotherapy
Top: Nasopharyngeal Cancer
Bottom: Cervical Cancer

Recent Project Achievement

Treatment protocols have been developed by conducting international joint clinical trials for cervical and nasopharyngeal cancers on an unprecedented scale in the Asian region. Through the clinical trials in this project, the protocols have been modified effectively and the treatments in Asian countries have been improved. The protocols developed in this project are in widespread use on radiation therapy institutes in Asian countries. The treatment results to date have been equivalent to or superior to those of other international clinical trials.

As a specific example, it has been confirmed that the protocol CERVIX-III for chemoradiotherapy for cervical cancer, for which a clinical trial has been conducted since 2004, is effective for Asians, and the number of countries adopting this protocol as the standard treatment in medical practice is increasing.



Left: Radiation Therapy Machine,
Right: FNCA Protocol Handbook

Workshop Outline

- Period: January 10 to 13, 2012
- Venue: Suzhou and Shanghai (China)
- Number of participants: 27

(Bangladesh, China, Indonesia, Japan, Korea, Malaysia, Mongolia, The Philippines, Thailand, Vietnam)

In addition to 10 FNCA member countries, 3 countries, India, Sri Lanka and Pakistan, which are member countries of IAEA/RCA, participated as observers in the workshop.

At the workshop, reports and discussions on clinical trial data collected in the respective countries on locally-advanced cervical and nasopharyngeal cancers, and on a survey for quality assurance/quality control (QA/QC) of external beam radiotherapy, were made. At the session on chemoradiotherapy for locally-advanced cervical cancer, the follow-up results were reported, and it was indicated that CERVIX-III was valid and effective for locally-advanced cervical cancer patients five-year overall survival and local control rates* were 55.1% and 76.8%, respectively.

At an open seminar held in Soochow University as part of the workshop, lectures on six themes: introduction to this project and efforts; current status of radiation therapy in China; chemoradiation therapy for esophagus cancer; head and neck cancer in the Philippines; geriatric oncology; and carbon-ion therapy in Japan, were held with attendance of approximately 70 university professionals, physicians and students.

In addition, the participants visited the First Affiliated Hospital of Soochow University and Fudan University Shanghai Cancer Center to observe the respective radiation therapy sites.

Workshop

** Local control rate: A rate at which focuses applied with radiation are controlled.*

Research Reactor Utilization Development

Research Reactor Network Project

This project was created in fiscal 2011 and is intended to share information such as the features and utilization of research reactors in operation in member countries to establish a network, thereby enhancing the technology infrastructure of researchers and promoting mutual use of the research reactors in each of these countries. In addition, the project aims to promote the stable supply of medical radioisotopes (RI)*using the network.

Isotope for Medical Use

Recent Project Achievement

The first workshop was held in Korea. Participating countries introduced and discussed the status and challenges (operation, application, management) of a research reactor, their plans for constructing new reactors and the issues and status of medical/industrial RI production. The participants agreed to construct and promote the regional network in Asia.

OPAL Research Reactor in Australia

Workshop Outline

- Period: October 24 to 27, 2011
- Venue: Daejeon (Korea)
- Number of participants: 22

(Australia, Bangladesh, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, The Philippines, Thailand, Vietnam)

After the scope and objectives of this project were explained, participating countries introduced their current status and the challenges of research reactors, their construction plans for new reactors and medical/industrial RI production and silicone semiconductor production. This was followed by discussions on the significance of establishing the regional network in Asia. In the discussions, the participants agreed to advance the preparation for constructing the FNCA regional network for RI production to ensure the stable supply of RI.

Workshop Participants

To define the specific activities of the network and determine the necessary steps to set up the network, it was decided to hold an ad-hoc meeting additionally, with participation of the main countries which operate research reactors and also produce and consume RI in the region.

The workshop participants visited the main facilities in Korea Atomic Energy Research Institute (KAERI), namely the multi-purpose research reactor (HANARO) which is widely used in R&D on medical/industrial RI production, neutron beam application research and neutron activation analysis, and looked over the usage conditions of the facility and the contents of the research being undertaken.

Workshop

** Radioisotope (RI): An atom which emits radiation when changing from active to stable states, its chemical characteristics are identical, but its weight is different.*

Neutron Activation Analysis Project

Neutron activation analysis (NAA) is an analytical technique for determining the elemental composition of substances. In NAA, samples are irradiated by neutrons and the gamma rays emitted by this activity are measured and analyzed.

This project discusses the usefulness of neutron activation analysis and aims to apply the samples determined by NAA for social and economic benefits. At present the NAA project covers geochemical samples, food samples and environmental samples as target materials.

Various Food Samples

Recent Project Achievement

In terms of environmental sample analysis, environmental samples (air-borne dust, etc) collected from various countries in Asia were analyzed using NAA for the past eight years to understand the extent of environmental pollution in each country. The results contributed greatly to the environmental administration in each of these countries.

NAA of geochemical samples is being done both for exploring mineral resources and for investigating regional pollution. NAA of food samples were selected based on the current conditions in the participating countries, and their elementary compositions were determined from the aspect of food pollution and nutrients. In the future, it is expected that the analysis results from these samples will contribute to the environmental administration.

Sample Collection of Marine Sediments

Workshop Outline

- Period: November 21 to 24, 2011
- Venue: Sydney (Australia)
- Number of participants: 15

(Australia, Bangladesh, China, Indonesia, Japan, Kazakhstan, Korea, Malaysia, The Philippines, Thailand, Vietnam)

In the workshop, the participants reported their progress on NAA at their respective research reactors. This was followed by discussions.

Starting in fiscal 2011, this project entered the first year of fourth phase. The goal of the current phase is to continue to analyze geochemical, food, and environmental samples from the 3rd phase.

The discussions covered the objectives and targets of the project, the methods of coordination/ mutual cooperation and road-mapping in the project, and ideas were exchanged that focused on promoting the effectiveness of performing NAA on the three samples to potential users.

Workshop

The discussions also highlighted how obscure a technique NAA is in general. The participants agreed that the NAA and how effective of the technique it is should be popularized.

The participants toured Australian Nuclear Science and Technology Organization (ANSTO) facilities, including the multi-purpose reactor (OPAL), neutron beam line instruments and the accelerator center, and looked over the usage conditions of the facilities and the contents of the research being undertaken.

Visiting ANSTO

Nuclear Safety Strengthening

Safety Management Systems for Nuclear Facilities Project

This project was initiated by Australia in 2009, replacing the former Nuclear Safety Culture (NSC) project. Having a strong safety culture and excellent safety management are important for ensuring safety at nuclear facilities. Thus, this project is aimed at deepening people's understanding of safety management systems for nuclear facilities and improving nuclear safety in Asian countries, by means of peer reviews* of host country reactor facilities.

Recent Project Achievement

Based on a review tool used in the NSC project and on IAEA Safety Standards, the SMS project team developed a peer review and self-assessment tool (the methodology) for the reviews. Using this tool, peer reviews have been conducted at the G. A. Siwabessy multi-purpose reactor (RSG-GAS) in Indonesia in 2010 and at the Puspati TRIAGA reactor (RTP) in Malaysia in 2011. These activities helped improve the safety management systems in those countries.

Peer Review in Indonesia (2010)

Workshop Outline

- Period :November 21 to 25 ,2011
- Venue: Kuala Lumpur (Malaysia)
- Number of participants :16

(Australia, Bangladesh, China, Indonesia, Japan, Korea, Malaysia, The Philippines, Vietnam)

In the workshop, Malaysia described its activities in the nuclear field, and it's safety and regulatory processes. Each of the participants reported on the status of safety management systems at their facilities. Japan made a special presentation on an overview of the accident at TEPCO's Fukushima Daiichi Nuclear Power Plant, the lessons learned from it and the safety management issues. Indonesia reported back on the 2010 peer review at their site at RSG-GAS facility. They are addressing the suggestions for potential improvements that were made.

Workshop

The peer review at RTP was conducted after the workshop. The RTP has a maximum thermal power of 1,000 kW and is utilised for research in nuclear physics, radiation chemistry, biology, shielding studies, neutron activation analysis and RI production. Following a report on RTP self-assessment given by facility staff, the peer review team toured the facility visiting the control room and main reactor area including the top of the pool. The team then held sessions with facility staff to conduct the peer review. RTP was found to have in place a number of good practices and the team also made several recommendations for improvement. The recommendations will be continuously followed up in Malaysia and reported on at a future workshop.

Peer Review

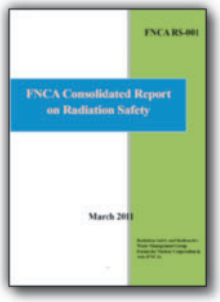
** Peer review: A review of a host facility by a team of experts from peer facilities who examine the host systems to identify good practices and areas for potential improvements.*

Radiation Safety and Radioactive Waste Management Project

The purpose of this project is to increase safety in handling radiation and radioactive wastes in the Asian region by sharing information and knowledge on radiation safety and radioactive wastes acquired through experience.

Recent Project Achievement

A consolidated report that summarizes the state of radioactive waste management in the respective countries was published in 2001, and a new version of the report was issued in 2007. In addition, to deepen the common understanding about radiation protection among the participating countries, a "Consolidated Report on Radiation Safety" was compiled in fiscal 2010, and published on FNCA's website in March 2011.



Consolidated Report on Radiation Safety

Workshop Outline

- Period: December 12 to 15, 2011
- Venue: Dhaka (Bangladesh)
- Number of participants: 15

(Australia, Bangladesh, China, Indonesia, Japan, Kazakhstan, Malaysia, Mongolia, Thailand, Vietnam)

Mongolia and Kazakhstan, which joined FNCA in fiscal 2011, also participated in this workshop, where presentations and discussions with themes concerning radiation safety and radioactive waste management (RS & RWM) were made.

At a country report session, the respective countries made presentations based on the "Consolidated Report on Radiation Safety," a draft of which was formulated in 2011, and the latest information on frameworks of regulations in the field of radiation protection and on radiation safety management at nuclear facilities was provided.

In addition, at a session on challenges that the participating countries face in the fields of radiation safety and waste management, representatives from Australia, Bangladesh, China, Japan and Mongolia made presentations on regulations and regulatory bodies for radioactive waste management, work environments, present state of low-level radioactive waste processing facilities, etc. The Japanese representative made a presentation on the impacts of the Great East Japan Earthquake on Tokyo Electric Power Company(TEPCO)'s Fukushima Daiichi Nuclear Power Station and the Japan Atomic Power Company's Tokai Daini Power Station, and reported the loss of the cooling function, the release of radioactive materials, etc at TEPCO's Fukushima Daiichi Nuclear Power Station. Further, the representative also explained a plan for disposing of extremely low-level

Workshop

wastes generated from decommissioning of the Japan Atomic Power Company's Tokai Power Station within the premises (shallow ground disposal without an artificial barrier). The Mongolian representative showed their future tasks such as preparing the final draft of waste safety regulations and obtaining approval, and improving the performance their waste storage facility.

At a session on lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station and accidents related to radiation with other nuclear facilities and on plans for emergency radiation monitoring and emergency responses, the Thai representative made a presentation on lessons learned from a case where a sealed radiation source was found in a metal scrap facility in 2008. The Japanese representative reported the radiation impacts on the environment and foods after TEPCO's Fukushima Daiichi Nuclear Power Station accident, the System for Prediction of Environmental Emergency Dose Information (SPEEDI)*, and the radiation monitoring system and emergency responses in Japan, and the report drew attention from the participants.

As a technical visit, the participants visited the Atomic Energy Research Establishment (AERE) of the Bangladesh Atomic Energy Commission (BAEC) in Savar to inspect the TRIGA MARK II research reactor, central waste processing and storage facility, tandem accelerator facility, RI production room, radiation polymer technology laboratory, secondary standard dose measurement experiment laboratory, etc. and held a discussion on improvement of facility operation management.

Visiting RI Production Laboratory

** System for Prediction of Environmental Emergency Dose Information (SPEEDI): A system that promptly predicts the impact on the environment such as atmospheric concentration of radioactive materials and exposure dose in the surrounding environment in an emergency where a large amount of radioactive material is or may be released from a nuclear power station or the like, based on the information on the release source, meteorological conditions and topographic data.*

Nuclear Infrastructure Strengthening

Nuclear Security and Safeguards Project

This project was started in fiscal 2011 in response to the prospects of the increasing use of nuclear energy in Asian countries and amid subsequent concerns about heightening risks to nuclear security and proliferation. A dramatic increase of nuclear material is foreseen, and nuclear security*1 and safeguards*2, along with nuclear safety, will become more important in the promotion of the peaceful use of nuclear power in Asian countries. This project aims to raise the awareness of the importance of nuclear security and nuclear safeguards among member countries, and to enhance nuclear security and safeguards through information exchange and discussion, human resource development (HRD) and R&D in these areas.

Recent Project Achievement

The first workshop of the project was held in Japan. In the workshop, the importance of nuclear security and safeguards to promote the peaceful use of nuclear power was emphasized, and each member country provided their experience and knowledge of nuclear security and safeguards implementation. After the participants from each country discussed and exchanged their views, each member country agreed on the importance of cooperation with each other in strengthening the infrastructure of nuclear security and safeguards, in collaboration with other multilateral frameworks such as IAEA, the Asia-Pacific Safeguards Network (APSN).

Workshop Participants

Workshop Outline

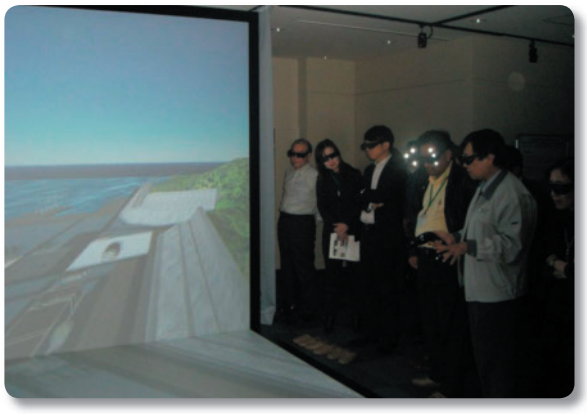
- Period: February 22 to 24, 2012
- Venue: Tokai and Mito (Japan)
- Number of participants: 30

(Australia, Bangladesh, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, The Philippines, Thailand, Vietnam, IAEA)

The introduction of the project was followed by lectures on Japan's nuclear security policy, the role IAEA plays in safeguards, and the Additional Protocol (AP)*3 for nuclear non-proliferation. The session after this provided information on the performance status and policies on nuclear security and safeguards in each member country. Subsequent round table discussion sessions covered the implementation of nuclear 3S(Safety, Safeguards, Security), the collaboration with other multilateral frameworks, and provided an opportunity to share information and views on HRD in these areas. The lectures and discussions showed how important it is to share experiences and knowledge among each member country in implementing nuclear security and safeguards. Each member country agreed to cooperate with each other for the enhancement of nuclear security and safeguards, in collaboration with other multilateral frameworks effectively.

The participants visited JAEA and observed Physical Protection*4 Exercise Field and Virtual Reality Training System, etc.

Workshop



Visiting JAEA Integrated Support Center for Nuclear Nonproliferation and Nuclear Security

1 Nuclear Security: Measures taken to prevent the threat of illegal use of nuclear materials and radioactive sources by terrorists, etc.

2 Safeguards: Measures taken to ensure that nuclear materials are used only for peaceful purposes and not for nuclear weapons, etc.

3 Additional Protocol (AP): An agreement concluded between a country and the IAEA, complementary to the country's safeguards agreement with the IAEA

4 Physical Protection: Measures to protect nuclear facilities and material against sabotage and theft.

Human Resources Development Project

Application of nuclear energy requires extremely wide-ranging expertise and on-site experience. Therefore, HRD is an important issue, and there is strong demand from Asian countries for it. In this project, information on experience, strategies, and challenges concerning nuclear HRD is shared, and strategies for having effective HRD and determining the way that international cooperation should be are discussed. And, this project surveys the available training programs in member countries, and also reviews measures for their mutual use. In this way, the project is aiming to help strengthen the infrastructure of nuclear technology in Asian countries.

Recent Project Achievement

The project is conducting a questionnaire survey about member countries' needs for nuclear HRD and the available training programs that can be mutually utilized by member countries, and constructing a database.

ANTEP website
(http://www.fnca.mext.go.jp/english/hrd/antep/index.html)

Workshop Outline

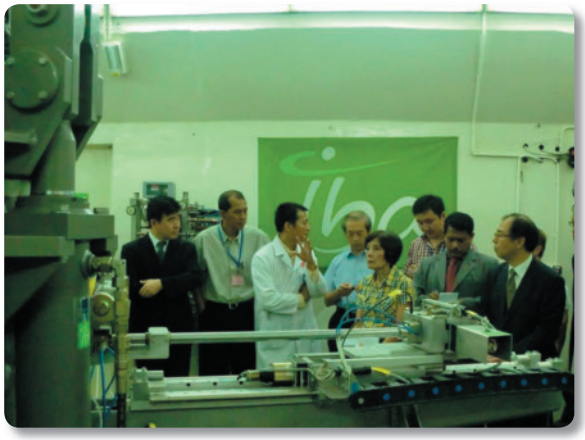
- Period: November 15 to 18, 2011
- Venue: Hanoi (Vietnam)
- Number of participants: 18

(Bangladesh, China, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, The Philippines, Vietnam)

At the beginning of the workshop, an open seminar was held with around 50 people participating. Lectures were delivered on application of nuclear science technology and HRD in Japan and Vietnam, and on a nuclear power project in Vietnam.

Workshop

In the workshop, the participants gave a country report on the main strategies and challenges relating to HRD in each country. And the results of Asian Nuclear Training and Education Program (ANTEP)* survey were reported. The survey results showed 29 examples of a connection between needs and training programs in FNCA member countries (except Japan). As future efforts, to effectively administrate ANTEP it was proposed that a program survey should be conducted by taking the survey results on needs into account. And it was suggested that member countries should designate an appropriate office or organization as a single channel to exchange information on HRD so as to facilitate cooperation in that area. For the countries which are planning to introduce nuclear power, Japan, China and Korea spoke on their experience of HRD for introducing nuclear power and the role played by nuclear research institutes. And Japan reported an outline of the accident at TEPCO's Fukushima Daiichi Nuclear Power Plant, as well as the lessons learned from it. On the last day, the participants visited the Nuclear Medicine Department, Cyclotron Center and Cyber Knife Center of Military Central Hospital 108.

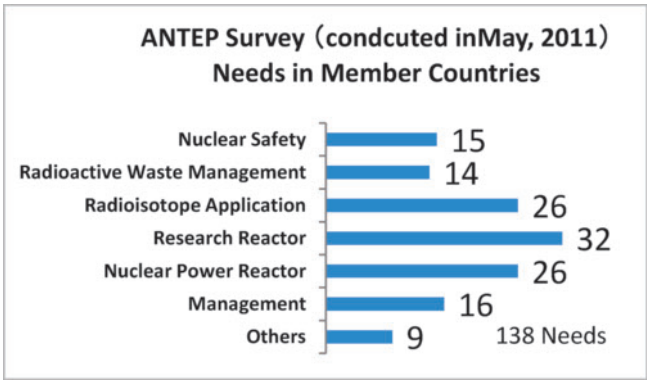


Visiting Military Central Hospital 108

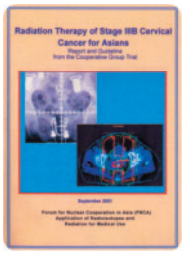
** ANTEP: The database developed by this project for matching needs and existing HRD programs, with the object of facilitating effective and efficient HRD activities in FNCA member countries.*

ANTEP and the Nuclear Researchers Exchange Program

MEXT has been carrying out the Nuclear Researchers Exchange Program since 1985. This program has invited nuclear researchers from neighboring Asian countries to Japan to develop and strengthen the nuclear base and nuclear safety in each country through research activities and training at research institutes and universities in Japan. To date, about 1,560 researchers from neighboring Asian countries have participated in this program and nearly 640 Japanese experts have also been sent to various countries in the region to assist in their research. Currently, the researchers invited to Japan and the experts sent to each country are selected on the basis of each country's particular needs, as identified through the ANTEP Survey.

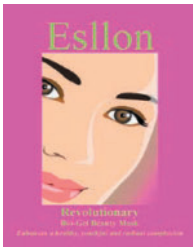


Outcomes of Project Activities



Radiation Therapy of Stage IIIB Cervical Cancer for Asians

Handbook in Brachytherapy Physics



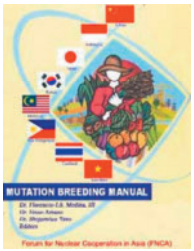
Beauty Face Mask "Esllon" (Malaysia)

Radiation Safety & Radioactive Waste Management Newsletter

ANTEP Website

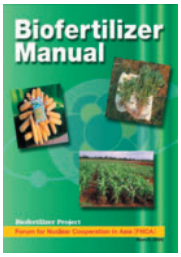
Hydrogel Wound Dressing "Cligel" (Korea)

Plant Growth Promoter "T&D 4DD" (Vietnam)



Mutation Breeding Manual

Achievement Report in Soybean/ Sorghum, Orchid and Banana



Biofertilizer Manual

The 3rd Panel Meeting of "Study Panel on the Approaches toward Infrastructure Development for Nuclear Power"

Dr. Akira Omoto
Commissioner of JAEC

The 3rd Meeting of "Study Panel on the Approaches toward Infrastructure Development for Nuclear Power" was held on July 5th and 6th in Jakarta, Indonesia, co-hosted by Cabinet Office (CAO)/Japan Atomic Energy Commission (JAEC) and National Atomic Energy Agency (BATAN) of Indonesia.

12 FNCA member countries namely Australia, Bangladesh, China, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, The Philippines, Thailand and Vietnam participated in this meeting, and Dr. Akira OMOTO, Commissioner of JAEC (Japan), and Dr. Taswanda TARYO, Deputy Chairman for the Utilization Results of R&D and Public Information of Nuclear Science Technology, BATAN took the co-chairs. The meeting shared information on the TEPCO's Fukushima Daiichi nuclear power plant accident (hereinafter called TEPCO Fukushima Nuclear Accident) caused by the earthquake and tsunami hit Japan on March 11 2011, and learnt knowledge and lessons that Japan obtained from the accident, as well as discussed on 1) assurance of nuclear safety in Asian region, 2) stakeholder involvement, and 3) Human Resource Development for Nuclear Power. The meeting also engaged in information exchange on 4) Post –TEPCO Fukushima era Nuclear Energy Program in China, Japan, and Korea, and how the future program should be. The meeting also followed up 5) the theme of the 12th Coordinators Meeting that had been cancelled due to the Great Tohoku-Pacific Ocean Earthquake.

(1)Assurance of Nuclear Safety in Asian Region

The followings 3 points were recognized through the discussion on assurance of Nuclear Safety.

a) As lessons learned from the accident, it is emphasized that utilizing an external event PSA(Probabilistic Safety Assessment) tool to assess the probability and consequence of natural hazard, and subsequently to reduce the overall risk by design and Severe Accident Management (SAM) is important.

b) Korea explained the use of PSA in regulation, which requires updating every 5 years. Risk-informed regulation is in place in Korean regulatory system in the area of regulatory inspection, effectiveness of maintenance and Integrated Safety Performance Assessment (ISPA).

c) It was agreed to enhance nuclear safety among FNCA countries by fully utilizing the potential synergy of FNCA Nuclear Safety Management System (SMS) Project and Asian Nuclear Safety Network (ANSN). In practice, the opportunity will be pursed through interaction between SMS project leadership and ANSN with a view of exploring joint activity with focus on natural hazard and the TEPCO Fukushima nuclear accident.

(2)Stakeholder Involvement

After the TEPCO Fukushima nuclear accident, FNCA member countries observed decreased public support for nuclear power in a varying degree from country to country. Many energy experts are thinking enhancement of nuclear safety must be addressed fully and public trust in the government activity to assure safety must be restored, although they feel the unique role of nuclear power as low carbon energy and as a tool for enhancing security of supply remains unchanged.

Most of the FNCA countries are in the stage of moving towards the official decision to implement Nuclear Power program or developing infrastructure necessary for nuclear power after such decision (such as Vietnam and Indonesia). Although the view of the government with regards to the viability of nuclear power is unchanged, there are cases of delay of implementation plan or reconsideration of safety requirements for nuclear power in the light of the TEPCO Fukushima nuclear accident.

(3)Human Resources Development for Nuclear Power

Integration of FNCA HRD database*1 to the ANTEP was agreed. Besides training/education of nuclear experts, participants recognized the importance of risk communication and training of communicator with the public on nuclear energy including health effect of radiation.

(4)Post – TEPCO Fukushima era Nuclear Energy Program

a) Korea mentioned following key elements; enhancement of nuclear safety and separation of regulatory body from Ministry of Education Science and Technology (MEST) which is in charge of nuclear R&D program and International cooperation

b) Japan said it had suspended discussion for revision of the Framework of Nuclear Energy Policy commenced in 2010.

c) Kazakhstan encouraged Japan for continued use of Nuclear Energy in Japan after enhancing safety, since this sets an example that nuclear safety issue can be appropriately addressed

d) IAEA and China focused on enhancing nuclear safety as a key element of post-TEPCO Fukushima Nuclear Energy policy, including IAEA's enhanced role and upgrading safety standards

A scene of the Meeting

(5) Follow up for the theme scheduled in the 12th Coordinators Meeting

Summary and Conclusion are as follows.

a) The scope of two new projects on "Research Reactor Network" and "Nuclear Security and Safeguards" were introduced and agreed by the meeting

b) The meeting agreed to terminate 3 projects, "Cyclotron and PET in Medicine", "Pubic Information", and "Research Reactor Technology" in 2010

c) The importance of Public Information was pointed out by the Philippines in connection with the TEPCO Fukushima nuclear accident. The leadership of Korea Nuclear Energy Promotion Agency(KONEPA) to succeed the activity of the PI project was suggested by the coordinator of Japan

d) The meeting took note that the business forum*2 will be postponed to appropriate time due to the TEPCO Fukushima nuclear accident.

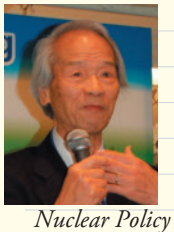
(6)Others

It was agreed to organize the next meeting in Thailand. The topics could include such as siting, licensing, emergency preparedness and response in the country and region and regional cooperation in it, Nuclear liability etc.

*1 : FNCA HRD Database : Database which provides the information of the Human Resources Program in Nuclear Power field. Its development was approved in the 8th Ministerial Level Meeting (MM) in 2007.

*2: Business Forum: Forum for the government-related organizations and industry from newcomer countries and supplier countries to discuss the possibilities for business opportunities.
It was proposed by Malaysia in the 10th MM in 2009.

Participants of the Meeting



Message from Dr. Sueo Machi FNCA Coordinator of Japan

The FNCA Minsterial Level Meeting was held in Tokyo 16 December, 2011. H.E. Mr. Hosono, State Minister for Nuclear Policy of Japan officially opened the meeting to underline the importance of role of FNCA to enhance close cooperation of Asian countries for peaceful and safe application nuclear energy. He also stressed that Japan shares fully the lessons learned from the severe nuclear accident of TEPCO Fukushima Daiichi Nuclear Power Station.

In fact, the report on the nuclear accident of Fukushima Daiichi NPS was major agenda at the FNCA Study Panel on Nuclear Power held in Jakarta in July 2011 sharing the lessons learned to strengthen safety to the highest level.

FNCA projects on application of radiation for sustainable development such as Project on Radiation Processing of Natural Polymers to produce plant growth promoter and soil conditioner, Project on Bio-fertilizer produced by radiation sterilization, development of new disease resistant banana under the Project on Mutation Breeding, have achieved excellent results contributing to enhancement of environmentally friendly and high productive agriculture.

For improved health care, the Projects Radiation Therapy of Cancer has developed new protocol for the treatment of advanced uterine cervix cancer by chemo-radio therapy with higher survival rate. The project on Cyclotron and PET has been concluded with the unique ATLAS of more than 200 PET images with interpretation which is most useful for medical doctors in diagnosis of patients.

The projects to enhance nuclear safety, namely the Nuclear Safety Management System and the Radiation Safety and Waste Management have contributed to the further enhancement of nuclear safety level of member countries through peer review by experts of the FNCA countries and self assessment.

In conclusion remarkable outcome by these projects and study panel have been achieved by excellent collaboration by the Member Countries benefiting them for development and welfare of people.

FNCA Activities in JFY 2011

Activity		Schedule	Host Country
The12th Ministerial Level Meeting		December 16th, 2011	Japan (Tokyo)
The 3rd Panel Meeting of "Study Panel on the Approaches toward Infrastructure Development for Nuclear Power		July 5-6th, 2011	Indonesia (Jakarta)
The 13th Coordinators Meeting		March 7-9th, 2012	Japan (Fukui)
Radiation Utilization Development	Mutation BreedingWorkshop	February 20-23rd, 2012	Thailand (Bangkok)
	Biofertilizer Workshop	September 27-30th, 2011	Mongolia (Ulaanbaatar)
	Electron Accelerator Application Workshop	January 30th –February 2nd, 2012	The Philippines (Manila)
	Radiation Oncology Workshop	January 10-13th, 2012	China (Suzhou & Shanghai)
Research Reactor Utilization Development	Research Reactor Network Workshop	October 24-27th, 2011	Korea (Daejeon)
	Research Reactor Network Ad Hoc Meeting	March 15-16th, 2012	China (Beijing)
	Neutron Activation Analysis Workshop	November 21-24th, 2011	Australia (Sydney)
Nuclear Safety Strengthening	Safety Management Systems for Nuclear facilities Workshop	November 21-25th, 2011	Malaysia (Kuala Lumpur)
	Radiation Safety and Radioactive Waste Management Workshop	December 22-24th, 2011	Bangladesh (Dhaka)
Nuclear Infrastructure Strengthening	Nuclear Security and Safeguards Workshop	February 22-24th, 2012	Japan (Tokai & Mito)
	Human Resources Development Workshop	November 15-18th, 2011	Vietnam (Hanoi)

What is the Forum for Nuclear Cooperation in Asia (FNCA)?

Name

FNCA : Forum for Nuclear Cooperation in Asia

Participating Nations

Australia, Bangladesh, China, Indonesia, Japan, Kazakhstan, Korea, Malaysia, Mongolia, The Philippines, Thailand and Vietnam, IAEA (Observer)

Ministerial-Level Meeting

The ministerial-level representatives of each country holding jurisdiction over nuclear activities discuss cooperation measures and nuclear related policies. On the day before the ministerial-level meeting, the senior administrative officials meeting is to be held.

Coordinators Meeting

The Coordinators who are selected as a representative by each nation discuss several issues including introduction revision & abolishment, coordination and evaluation of cooperative projects.

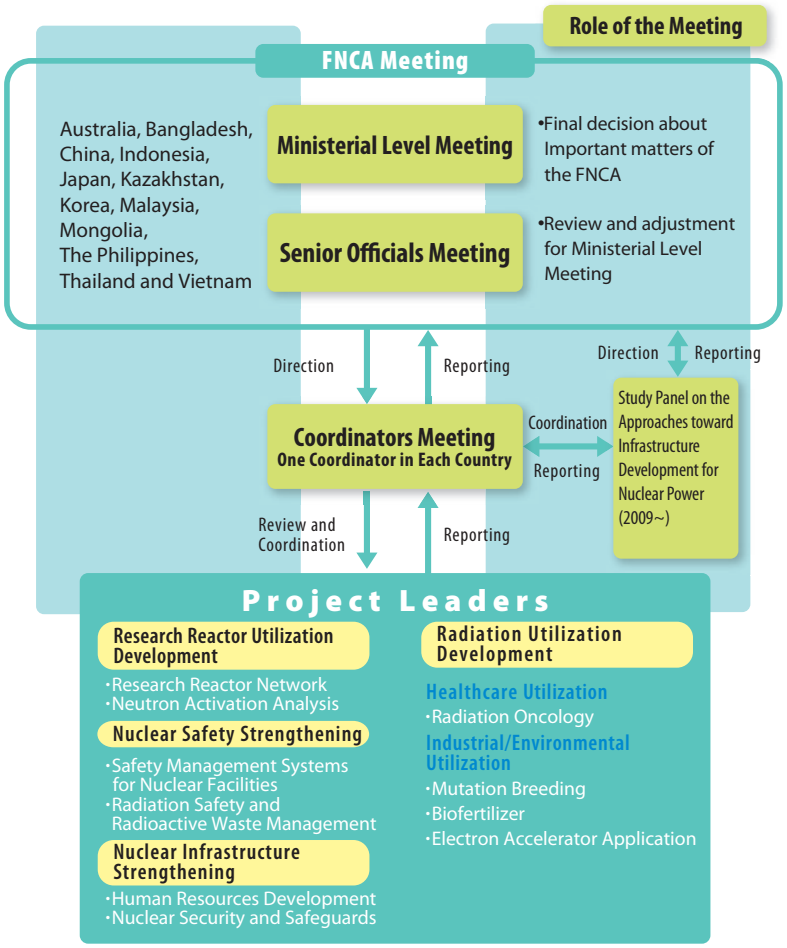
Panel Meeting

To examine & evaluate the role of nuclear energy, and also study problems related to the introduction of nuclear power generation. A new study panel on the Approaches toward Infrastructure Development for Nuclear Power started in 2009.

Project

Each FNCA participating nation holds workshops through post rotation to discuss activity programs. And in addition to workshops, appropriate expert's meeting are held for each project.

The FNCA Framework



Nuclear Safety Research Association [NSRA], FNCA Secretariat

5-18-7 Shinbashi Minato-ku Tokyo 105-0004 Japan
TEL: 03-5470-1983 FAX: 03-5470-1991 FNCA Website: http://www.fnca.mext.go.jp/english/index.html

This Newsletter is issued by Nuclear Safety Research Association (NRSA) under the contract with the Ministry of Education, Culture, Sports, Science and Technology (MEXT)