

# FNCA Newsletter

## Forum for Nuclear Cooperation in Asia

No.11 March 2008

### *The 8th FNCA Ministerial Level Meeting*

The 8th FNCA Ministerial Level Meeting was held on December 18, 2007 in Tokyo, with the participants of Ministerial-level and Senior Officials in charge of development and utilization of nuclear technology from ten Asian countries.

At the meeting, the highlights and achievements of FNCA activities in FY2007 and future plans were reported, and each head of delegations of participating countries made a report on general policy for nuclear energy and related activities. The outcomes of 11 FNCA projects in 8 fields related to radiation application were reported and the prospects of the projects were also discussed. Finally FNCA future plans, such as FNCA projects plan (2008) and Follow-up of the Study Panel on Human Resource Development (HRD) were discussed on the round table. In the ending session, the heads of delegation of nine countries sang the “FNCA joint communiqué on the peaceful use of nuclear energy toward sustainable development”, which includes the following decisions as the main contents.

- (1) To work towards raising global awareness that, in the framework of addressing global warming beyond 2012, it is important to promote the utilization of civilian nuclear power as a clean energy source and should be considered in the Clean Development Mechanism (CDM)
- (2) To make further efforts to ensure nuclear non-proliferation, safety and security in promoting the use of civilian nuclear power



Introductory Speech by Minister KISHIDA

The meeting made resolutions to make efforts to disseminate the joint communiqué in each signatory country and the international community by various means such as announcement at the international conferences concerning global warming and to actively make efforts to implement provisions of the joint communiqué.



From left: **Mr. Huang Wei** (China Atomic Energy Authority (CAEA), China), **Mr. Shaikh. Md. Wahid-Uz-Zaman** (Ministry of Science and Information & Communication Technology (MOSICT), Bangladesh), **Dr. Hudi Hastowo** (National Nuclear Energy Agency (BATAN), Indonesia), **Mr. Fumio Kishida** (Minister of State for Science and Technology Policy, Cabinet Office (CAO), Japan), **Dr. Yoon Chung** (Ministry of Science and Technology (MOST), Korea), **Mr. Dato' Kong Cho Ha** (Ministry of Science, Technology and Innovation (MOSTI), Malaysia), **Prof. Tran Quoc Thang** (Ministry of Science and Technology (MOST), Vietnam), **Dr. Suchinda Chotipanich** (Ministry of Science and Technology (MOST), Thailand), **Dr. Ron Cameron** (Australian Nuclear Science and Technology Organisation (ANSTO), Australia), **Dr. Estrella F. Alabastro** (Department of Science and Technology (DOST), Philippines)

## *The 7th FNCA Ministerial Level Meeting*

The 7th FNCA Ministerial Level Meeting was held in Kuantan, Pahang, Malaysia on November 27, 2006, cosponsored by Cabinet Office(CAO), Japan Atomic Energy Commission, and Government of Malaysia.

The participants were Ministerial Level representatives and Senior officials from ten Asian countries, namely Australia, China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand and Viet Nam, including Bangladesh as a new member. IAEA also attended the meeting as an observer. Mr. Hirasawa, Senior Vice Minister of Cabinet Office (Japan) and Dr. Jamaludin, Minister of Science, Technology and Innovation (Malaysia) made an opening address.



**Mr. Hirasawa, Senior Vice Minister of Cabinet Office (Japan) and Dr. Jamaludin, Minister of Science, Technology and Innovation (Malaysia)**

In session 1, heads of delegations presented nuclear research and development policies and FNCA activities in their countries.

In session 2, the progress of “Asian Nuclear Training and Education Program” (ANTEP) was reported and it was agreed to implement the program, particularly through bilateral consultation between the countries offering the training and the countries of origin of the trainees.

At the Round table discussion of session 3, two topics, namely “Role of Nuclear Energy for Sustainable Development in Asia” and “Public Information of Nuclear Energy” were discussed. In the first topic, it was agreed that a new “Study Panel for Cooperation in the Field of Nuclear Energy in Asia” be formed as the second phase of activities focusing on six study areas. In addition, it was agreed to appeal, as a group, to the COP to UNFCCC for nuclear power to be included as a Clean Development Mechanism (CDM) . In the second topic, it was agreed to share information on their respective experience, with emphasis on the critical factors of public information, including transparency, media communications, education, community development, and value proposition.



**Group picture of Delegates of FNCA Countries**

## ***The 3rd FNCA Panel Meeting “Role of Nuclear Energy for Sustainable Development in Asia”***

The 3rd FNCA Panel Meeting on “Role of Nuclear Energy for Sustainable Development in Asia” was held in Tsuruga, Fukui on November 1-2, 2006. The Meeting was attended by 18 participants from 8 FNCA member countries; China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand, and Vietnam.

### **Session 1**

The Summary of the 1st & 2nd Meeting of the Panel was presented. Scopes and issues already discussed at the Panel in 2004-2006 were:

- 1) National energy supply/demand strategy in medium/long-term energy planning;
- 2) Policy for mitigation of environmental pollution and climate change;
- 3) Possible roles of nuclear power in medium/long-term energy planning.

### **Session 2**

Three papers were presented.

The 1st paper: “APEC Energy Demand and Supply Outlook 2006”.

The 2nd paper: “Nuclear Energy Administration in Fukui Prefecture”.

The 3rd paper: “University Education for Nuclear Power Plant Location Area”.



**Discussion of 3dr Panel Meeting**

### **Session 3**

Introduction of nuclear power in Vietnam and Indonesia were presented.

### **Session 4**

The Draft Report of the Panel on Role of Nuclear Energy for Sustainable Development in Asia for 2004-2006 was discussed.

Table of content of report is as follows

- 1) Scope of the Panel
- 2) Energy outlook of FNCA countries
- 3) Energy policy of FNCA countries
- 4) Common issues on energy policy of FNCA countries
- 5) Common issues on introduction and expansion of nuclear power in FNCA countries

The new “Study Panel for cooperation in the field of nuclear energy in Asia” was proposed for the second phase of activities in the FNCA.

After the discussion, the following priority of issues was agreed upon:

- 1) Economic analysis and financing scheme.
- 2) Human resource development
- 3) Nuclear safety, security and safeguard system
- 4) Acceptance of NPPs by the public and other stakeholders
- 5) Support systems (ex. NPPs maintenance, Low level waste management).

### **On the 2nd day,**

The participants agreed that the introduction of nuclear power requires development of infrastructure such as safety regulation and security system, human resource development, public acceptance, economic analysis and financing scheme, and assurance of non-proliferation. The panel proposed to continue the 2nd phase of activities on the “Study Panel for cooperation in the field on Nuclear Energy in Asia”.

## ***The 1st FNCA Panel Meeting*** ***“Study Panel for Cooperation in the Field of Nuclear Energy in Asia”***

The 1st FNCA Panel Meeting of “Study Panel for Cooperation in the Field of Nuclear Energy in Asia” was held in Tokyo on October 30 and 31, 2007, sponsored by Japan Atomic Energy Commission (JAEC) and Cabinet Office (CAO). The Meeting was attended by 10 countries, Australia, Bangladesh, China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand, and Viet Nam.

At the Meeting, each of participating countries reported the current situations and the future plans for nuclear power, and the situations and challenges of human resource development (HRD). In addition, existing cooperative activities and possibilities of future cooperation toward the introduction of nuclear power were discussed focusing on HRD.

As a result, it was agreed that sharing valuable information among FNCA members on HRD toward nuclear power, such as early experience on building Nuclear Power Plant, good practices, public acceptance and regulation, is important especially for the countries to introduce nuclear power. In addition it is recommended that information exchange on HRD for the introduction of NPP among the FNCA member countries should be enhanced. As the first step, it is recommended that FNCA web-site will be effectively utilized for this purpose.

### **Session 1: Summary of the 7th FNCA Ministerial-Level Meeting and Overview of the Panel**

Dr. Sueo Machi, FNCA Coordinator of Japan, explained the summary of the 7th FNCA Ministerial-Level Meeting (in November 2006), the background of the FNCA Panel Meeting, and the purpose of this newly launched Panel of “Study Panel for Cooperation in the Field of Nuclear Energy in Asia”



**Discussion of 1st Panel Meeting**

### **Session 2: Human Resource Development Looking over Future Deployment of Nuclear Power in Asia**

The participants presented the current situations and future plans of each country as related to nuclear power, and reported the situations and challenges of HRD in view of those plans.

### **Session 3: Common Issues concerning Human Resource Development (Invited Speech)**

“Nuclear Knowledge Management —The Pivot for Safe Use of Nuclear Energy—”

Mr. Shojiro Matsuura, Advisor, the Nuclear Safety Research Association (NSRA)

“Human Resource development for Promoting Nuclear Energy Plant —Experience in The Japan Atomic Power Company (JAPC) -

Dr. Takao Fujie, Fellow, Executive Advisor to the Corporate Management, JAPC

### **Session 4: Human Resource Development (HRD) toward Introduction of Nuclear Power**

Regarding HRD toward the introduction of nuclear power, the review of the past cooperative activities and the possibility of future cooperation were discussed.

### **Session 5: Nuclear Power for Climate Change**

Mr. Masaharu Fujitomi, Director, Electric Power Development Co., Ltd. (J-POWER), (former Member of the Clean Development Mechanism (CDM) Executive Board), made the speech about global environmental issues and nuclear power, focusing on the activities of the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC).

### **<Wrap-up Session>**

The outcomes of discussions at this Panel Meeting were summarized as follows, and it was decided to report these outcomes at the 8th FNCA Ministerial Level Meeting, scheduled to be held in Tokyo on December 18, 2007.

- The FNCA member countries agreed to more actively promote to share valuable information about HRD toward the introduction of nuclear power.
- As the first step, it is recommended that FNCA web-site will be effectively utilized,

## *The 8th FNCA Coordinators Meeting*

The 8th FNCA Coordinators Meeting was held in Tokyo from February 7 to 9, 2007. Representatives from nine countries of the FNCA members, Australia, China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand and Viet Nam, attended the meeting, with Bangladesh absent. IAEA participated in this meeting as an observer. The meeting consisted of four sessions.

In Session 1, Dr. Sueo Machi, FNCA Coordinator of Japan, reported the results of 7th FNCA Ministerial Level Meeting (held in November 2006), explaining that participants agreed to appeal, as a group, to COP to UNFCCC for nuclear power to be included as a Clean Development Mechanism (CDM) under the Kyoto Protocol.



Participants of 8th Coordinator Meeting

In Session 2, the outputs of the Panel on "Role of Nuclear Energy for Sustainable Development in Asia". were reported. In addition, the future cooperation plan under a new "Study Panel for Cooperation in the Field of Nuclear Energy in Asia" formed at the 7th FNCA Ministerial Level Meeting was reported and the order of the priority areas to be studied by the Study Panel was discussed.

In Session 3, the FNCA Project Leaders presented activities and future plans for 12 projects in 8 fields under way and details of the activities were confirmed.

In particular, there was a need to manage medical radioactive waste, therefore the activities on RWM project should also consider how to meet these needs. In the session of Public Information of Nuclear Energy project, it was agreed that exhibition materials related to nuclear energy should be shared among FNCA countries and it was confirmed that quick action and transparency in giving information to the mass media especially in the event of an incident and accident are essential in gaining the trust of the public. In the session of the Human Resources Development project, the meeting confirmed that Japan's MEXT program has been an important mechanism in responding to the training needs of FNCA member countries. In the session of Radiation Oncology (RO), the meeting proposed that in the future, diagnostic tools using PET-CT could also be applied in radiation oncology project.

In Session 4, Future FNCA activities were discussed and the following results were obtained.

1) On Tc-99m Generator project:

The meeting noted that development of the PZC technology is one of the most tangible outputs of the FNCA projects and agreed to conduct expert missions for three Member Countries

2) On the Biofertilizer project:

The project should be continued to the next phase with strong collaboration and linkages with end-users such as the Department of Agriculture.

3) On the Improvement of Project Implementation:

The Meeting agreed that Annual Workshops should suffice. However, the researchers are encouraged to network at all time using information technology.

4) On FNCA/RCA Collaboration:

The meeting agreed in principle that both FNCA and RCA should collaborate and two areas of Radiation Processing Technology and Radiation Oncology were suggested.

## Major Achievements of Ongoing Projects

### Application for Agriculture

In the field of Applications for Agriculture, the theme on expanding usage of the methods for breeding and biofertilizers were discussed in the group of Mutation Breeding and Biofertilizers respectively. For the Mutation Breeding project, the workshops were held in Takasaki, Japan on September 11-15, 2006 and in Daejeon, Korea on November 19-23, 2006. And for the Biofertilizers project, the workshops were held in Chiang Mai, Thailand on November 20-24, 2006, and in Kuala Lumpur, Malaysia on February 25-29, 2007.

#### Mutation Breeding

The project aims at contributing to higher-value-added of plants for export and production increase of crops by using genetic mutation based on irradiation for creating excellent new species that are in high demand among Asian countries. They have been conducting researches on new improved species such as disease-resistant bananas, insect-resistant orchids and drought-resistant sorghum (a crop in the rice family) and soybeans.

At the workshop in 2006, after reviewing the final results for drought-resistant sorghum and soybeans, it was confirmed to be established a new species or promising systems, and consequently it was agreed to terminate these researches in 2006. At the same time, it was decided at the workshop to start a new investigation in connection with a modification of the ingredients or improvement of species based on the content volume of amylose in rice from FY2007.

At the workshop in 2007, it was reported that the project on disease-resistant bananas will be terminated in Indonesia but will be continued in Malaysia under a situation of cooperative research with private sector focused on the fusarium disease of Bananas. And it was proposed that insect-resistant orchids subproject was to be continued through the end of 2009 because breeding of variable species have not been successful yet.

**Breeding: Development and growth of new species for improvement of plants**



**Irradiation Facility  
Korea Atomic Energy Research Institute (KAERI)**

#### Biofertilizer



**Technical tour to Biofertilizer Plant,  
Malaysian Nuclear Agency (Nuclear Malaysia)**

The project aims at a form of agriculture that preserves the environment and soil by increasing crop harvests in Asian countries and reducing excessive use of chemical fertilizers through the use of microbial functions as biofertilizer. At the workshop in FY 2006, the strategies for enhancing the use of biofertilizers, a comparison between irradiation sterilization and thermal sterilization, and strategies for commercializing irradiation-sterilized carriers were discussed. As future new activities, a proposal was made and discussed in connection with the development of new multifunctional biofertilizers suitable for agricultural system in each country.

At the workshop in FY 2007, for make forward the cooperative works on multi-functional biofertilizers project, countries for each product were assigned. Additionally, it was discussed that the important agricultural products were not only products for foods but also the products for energy, and it

was confirmed that the cooperative works among FNCA countries are important. The Biofertilizer Newsletter No.7 (prepared in English) was issued in February 2007 on the edition of the Philippines.

## Application for Medical Care

In the field of Medical Care, it has been made efforts on the collections and analyses for clinical trial data and improvement and standardization for nuclear medicine technology respectively.

For the Radiation Oncology project, the workshops were held in Ho Chi Minh, Viet Nam on January 9-13, 2007 and in Manila, the Philippines on January 22-25, 2008. And for the Cyclotron/PET project, the workshops were held in Kuala Lumpur, Malaysia on August 14-18, 2006 and November 19-23, 2008.

### Radiation Oncology

Aiming at upgrading the results of radiotherapies and promoting them in Asia, the project collects and analyzes clinical trial data (types of adverse reactions and survival rates) for each of the protocols of the clinical studies that were jointly carried out in FNCA countries so as to establish protocols for the treatment of cancers with a high incidence rate (e.g., uterine cervical cancer and nasopharyngeal cancer). This data is significant as independent data in Asia.

At the workshop in FY2006, the favorable results, including the survival rate of uterine cervical cancer were confirmed. At the time of the workshop, an open seminar was also held in Hanoi and Ho Chi Minh, presenting the status quo of radiotherapies. Favorable results were reported again on the onsite surveys on radiation doses of brachytherapeutic equipment for uterine cervical cancer for quality assurance/quality control (QA/QC) conducted by Japanese specialists at 16 hospitals in eight countries from FY2002 to FY2006.

And at the workshop in FY2007, on the basis of the discussion in FY2006, favorable results of the survival rate of uterine cervical cancer were confirmed and the need to continuously collect clinical trial data of nasopharyngeal cancer was reported. A manual for quality assurance/quality control (QA/QC) of radiation doses of brachytherapeutic equipment for uterine cervical cancer will be completed during FY2007.



Technical Visits to Philippine General Hospital

### Cyclotron and PET in Medicine

The project aims at improving and standardizing nuclear medicine technology to bolster the health of people in Asia through the early detection and treatment of diseases. Specifically, they are endeavoring to upgrade technology for PET and cyclotron in three themes: diagnostic imaging, manufacture of radioactive pharmaceuticals and image processing & instrumentation.



Technical Tour to the Putrajaya Hospital, Malaysia

At the workshop in FY2006, the current statuses of nuclear medicine and the plan of PET introduction in participating countries were reported. It was agreed that a national Work Plan would be implemented. For instance, each country would select a person who would be responsible for each of three themes and a specialist committee would be set up for each theme. Along with the workshop, a seminar on PET was held, inviting surgeons and pharmacists.

Also, at the workshop in FY2007, importance of periodic PET performance test for quality control of image reconstruction device, issuance of a guideline for production of radioactive medicines, and publication of a report of clinical diagnosis cases by clinical PET were discussed. Malaysia serves as a leader in the project.

## Research Reactor Utilization

In the area of Utilization of Research Reactors, a workshop was held in Manila, The Philippines from August 28 to September 1, 2006 and also in Serpong, Indonesia from October 29 to November 2, 2007. At the workshops the results of environmental specimens analysis and burnup calculation which were underway in the field of NAA and PRT respectively were discussed.



Source of Utilizing Research Reactor

### Neutron Activation Analysis

Aiming to demonstrate the advantage of radioactivation analysis for environmental specimens and to make practical use of radioactivation analysis as a standard analytical technology for environmental management, the project discussed the effective methodology of analyzing elements of airborne particles in the first phase (FY2002-2004). Currently, the second phase (FY2005-2007) is underway, involving the collection of environmental specimens and analysis of data, aiming at contributing to environmental policies. At the workshop held in Indonesia, continued efforts of each country to develop practical analysis methods was reported including collection and analysis of environmental specimens as planned. Meanwhile, as far as environmental contamination monitoring is concerned, airborne particles and/or marine deposits in the FNCA countries have been sampled and analyzed confirming the progress in practical application of analysis methods which were recommended in the first phase.

### Research Reactor Technology

The FNCA countries calculated the burnup of fuels using the same code system, such as SRAC, to improve research reactor technology and its operation. SRAC is the convenient Japanese code system for calculation that is widely used for calculating a reactor core. At the FY2006 workshop the results of core calculation were reported and discussed by the FNCA countries. At the FY2007 workshop, final results were reported by the FNCA countries confirming that results of burnup calculation using the same code system were in good agreement with experimental data and calculation results with other code system. The project is discussing the future commencement of core safety analysis. Having been advanced as part of the RRT field, the TCG Project was terminated during FY2006. For a follow-up for future commercialization, Japan sent experts to Viet Nam in January and The Philippines in February and will send experts to Malaysia in March.

## Nuclear Safety Culture

The project aims at contributing to ensuring safety at nuclear facilities and upgrading awareness of nuclear safety culture in Asia by creating an opportunity for information exchange and discussions to strengthen safety culture and by developing a means of assessing the status of safety culture activities. In addition to the workshop for reporting current status and exchanging opinions, since FY2003 this project has performed every year such activities that nuclear experts visit the research reactors in each countries, investigate their safety features in details and pick up problem. The recipients are 4 countries, that is, Viet Nam, Korea, Indonesia and Malaysia till now.



Reactor TRIGA PUSPATI (RTP), Malaysia

These 4 countries have been improving their reactors from the safety point of view, according to the issues pointed out and recommendations. It has been advanced under Australian leadership. At the workshop which was held in Bangi, Selangor, Malaysia from September 19 to 21, 2006, country reports were discussed and, concerning the results from the peer review for PUSTATI reactor and the identified issues, a long and short plans addressed to the issues and the status of the plans are reported. At a workshop which is expected to be held in Beijing, China, on March 26 and 27, 2008, historical results will be reviewed and future direction of the project will be discussed.

## Public Information



Training of press conference provided by IAEA

The project works for sharing experiences and information among the FNCA countries, for example, studies and opinion exchanges for preparing quality PR videos and posters, to facilitate the understanding of the public in each country to facilitate the peaceful use of nuclear energy in Asia.

The Project Leader Meeting (PLM) was held at Jakarta, Indonesia from November 6 to 10, 2006 and discussed on the usability of exchanging data for public information among FNCA countries and usage of nuclear information Web-site of FNCA as a mean of quick information exchange. And it was reported that the information being not based on the fact spread less frequently by strengthening the tightness with the communication media. Then, sharing the information was confirmed to be important.

The Project Leader Meeting (PLM) was held at Kuala Lumpur, Malaysia from November 26 to 30, 2007, reporting the current status of public information of nuclear energy from each country and introducing their DVD/video and poster/pamphlet for its purpose.

It was decided that the introduction of concrete material for public information would be continued since it had ensured great effectiveness for the purpose in their countries.

Also, the training program was put into execution for nuclear communicators based on IAEA experiences.

## Radioactive Waste Management

An aim of the project is to improve the safety of radioactive waste management by encouraging countries in Asia to share the relevant information and knowledge. The safety and reliability of radioactive waste management is an important issue and a matter of considerable interest for people in each country, with the situation varying depending on the country. It is important, therefore, to have discussions and study according to the actual situation in each country. In this context, it is scheduled that Japanese experts visit the FNCA country's facility for surveys and discussions in response to the situation. Then, the experts visited Australia and Malaysia in 2006, for surveys and opinion exchanges with experts in the counterpart on the current conditions of decommissioning of research reactors and so on in both countries and visited Thailand and Vietnam in 2007, on the current status of radioactive waste management and so on in both countries.

A workshop was held in Beijing from November 20 to 24, 2006, including reports and opinion exchanges about the current status of radioactive waste management and the future plan in each country. And also, in this workshop, each country presented such themes that people has considerable interests in each country, after that, opinions were exchanged. They are "Conceptual design of shallow land burial facility", "Treatment and conditioning of radioactive waste for disposal", "Management of radioactive wastes from medical use" and so on.

A workshop was held in Bangkok from November 19 to 23, 2007, including a report and an exchange of opinions about the current status and the future plan of management and disposal of radioactive waste in each country. And also, in this workshop, the current status of "Management of radioactive waste from medical use", "Siting of the disposal facility" and so on were introduced and discussed the reflection on each country for these themes.



The Radioactive Waste Management in Viet Nam

## Human Resources Development



Training and education of researchers from Asia in Japan

The project aims at establishing the Asian Nuclear Training and Education Program (ANTEP), which is the system for coordinating the FNCA countries' needs related to human resources development and training programs to promote international exchange for human resources development and strengthen the foundations of nuclear technology. Questionnaire-based surveys were conducted to determine the needs of FNCA countries and training programs in FY2006 and FY2007 were held to increase the adaptability of training programs to these needs.

A workshop was held in Shenzhen in China from July 31 to August 4, 2006 including a mutual consultation etc. about a pilot program, that is, trial program of ANTEP based on the results of survey.

A workshop was held in Yogyakarta, Indonesia from August 27 to 31, 2007, including a discussion in connection with the results of an analysis of the questionnaires about ANTEP. Human resources development for nuclear energy becomes an important issue as it raises high interest in the FNCA countries.

From the results of the analysis of ANTEP survey, for the 49 cases of the countries' needs presented at the last workshop, 21 cases were identified as matched one, and participating countries requested for 25 cases that have not been incorporated in the acceptance program but still have highly needs. The 50 of the 74 cases which were presented through the new survey have been judged to be able to address with the use of Japanese programs that would be available in the future. As the HRD factors concerning the introduction of nuclear power were recognized as an important issue, it was nominated as next important items to be discussed.

## Industrial Application

### Low Energy Electron Accelerator

The project aims at bringing economic and social benefits to the FNCA countries by developing the method of radiation processing (decomposition and crosslinking) of natural polymers (e.g., cellulose, alginate, chitin and chitosan) with electron accelerators and establishing the technology that contributes to industrial promotion and environmental preservation by the use of electron accelerators. The practical application for manufacturing commercial goods is being aimed by using the technology of irradiating natural polymers and strengthening the molecular structure to enhance the value of use (radiation crosslinking).

A workshop was held in Kuala Lumpur, Malaysia from December 12 to 16, 2006, including a report of research result from each country and discussions in each theme such as hydrogels wound dressing, water absorbent hydrogels and radiolytic decomposition of polysaccharide.

A workshop was held in Ho Chi Minh City in Vietnam from October 22 to 26, 2007. In the workshop, it was reported that commercialization of a cosmetic mask is already in a practical phase in Malaysia for hydrogels wound dressing, that the research results were obtained showing that agent for plant growth and soil improvement using water super-absorbent hydrogels made from cassava starch can be available in Vietnam for water absorbent hydrogel, and that the obtained results of field experiment using oligo chitosan in Indonesia shows higher harvest than conventional method and shorter term for picking for radiolytic decomposition of polysaccharide and so on.

As an activity of dispatched experts supporting the field of fabrication using irradiation on natural polymer, Japanese experts visited Philippines and Thailand, February 2006 and Vietnam and Malaysia, July 2007 and discussed on fabrication of water-retaining hydrogel and so on.



Manufactured Super Water Absorbent.JPG

FNCA Project WS/PLM in 2006 and 2007

2006

Projects/Field	Date	Venue	
FNCA Ministerial-level Meeting	11/25, 27	Malaysia	
Coordinators Meeting	2/7 ~ 9	Japan	
Panel Meeting " Role of Nuclear Energy for Sustainable Development in Asia "	11/1 ~ 2	Japan	
Research Reactor Utilization	Tc-99m Generator W S	8/28 ~ 9/1	The Philippines
	Neutron Activation Analysis W S		
	Research Reactor Technology W S		
Application for Agriculture	Mutation Breeding W S	9/11 ~ 15	Japan
	Mutation Breeding Sub-Project Meeting on Disease Resistance in Banana	7/25 ~ 28	The Philippines
	Biofertilizer W S	11/20 ~ 24	Thailand
Application for Medical Care	Radiation Oncology W S	1/9 ~ 13	Viet Nam
	Cyclotron and PET in Medicine W S	8/14 ~ 18	Malaysia
Public Information	PLM	11/6 ~ 10	Indonesia
	Regional Speakers Bureau	11/27 ~ 28	Indonesia
Radioactive Waste Management	W S	11/20 ~ 24	China
	Decommissioning and Clearance Task Group Activities	7/24 ~ 28	Australia
		8/7 ~ 10	Malaysia
Nuclear Safety Culture	W S	9/19 ~ 21	Malaysia
	Peer Review	4/5 ~ 7	Malaysia
Human Resources Development W S	7/31 ~ 8/4	China	
Industrial Application	Low Energy Electron Accelerator W S	12/12 ~ 16	Malaysia

2007

Projects/Field	Date	Venue	
FNCA Ministerial-level Meeting	12/17 ~ 18	Japan	
Coordinators Meeting	3/10 ~ 11	Japan	
Panel Meeting " Study Panel for Cooperation in the Field of Nuclear Energy in Asia "	10/30 ~ 31	Japan	
Research Reactor Utilization	Neutron Activation Analysis W S	10/29 ~ 11/2	Indonesia
	Research Reactor Technology W S		
Application for Agriculture	Mutation Breeding W S	11/19 ~ 23	Korea
	Mutation Breeding Sub-Project Meeting on Insect Resistance in Orchid	8/7 ~ 10	Thailand
	Biofertilizer W S	2/25 ~ 29	Malaysia
Application for Medical Care	Radiation Oncology W S	1/21 ~ 26	The Philippines
	Cyclotron and PET in Medicine W S	11/19 ~ 23	Malaysia
Public Information	PLM	11/26 ~ 30	Malaysia
	Regional Speakers Bureau	2/18 ~ 19	Indonesia
Radioactive Waste Management	W S	11/19 ~ 23	Thailand
	Decommissioning and Clearance Task Group Activities	8/6 ~ 10	Thailand
		8/20 ~ 24	Viet Nam
Nuclear Safety Culture W S	3/26 ~ 27	Chine	
Human Resources Development W S	8/27 ~ 31	Indonesia	
Industrial Application	Low Energy Electron Accelerator W S	10/22 ~ 26	Viet Nam

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

The Forum for Nuclear Cooperation in Asia (FNCA) means the framework (forum) for encouraging cooperation among Asian countries in the use of nuclear technology to improve the lives of the people of each country under the leadership of Japan. The FNCA member countries are promoting activities related to the use of nuclear energy.

**[Name]**

**FNCA : Forum for Nuclear Cooperation in Asia**

**[Participating nations]**

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

**[Framework]**

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 officer's meeting is to be held.

Coordinator 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 to study problems related to the introduction of nuclear power generation. A new theme of "Study Panel for Cooperation in the Field of Nuclear Energy in Asia" for the panel meeting started in 2007.

Project

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

The FNCA Framework



**Nuclear Safety Research Association**

5-18-7 Shinbashi Minato-ku Tokyo 105-0004 Japan

Tel:81-3-5470-1983 Fax:81-3-5470-1991 FNCA Website:<http://www.fnca.mext.go.jp/>