

# FNCA Newsletter

## Forum for Nuclear Cooperation in Asia

Issued by Japan Atomic Industrial Forum, Inc.

Sponsored by the Ministry of Education, Culture, Sports, Science and Technology

No.5 March 2002

## A Few Thoughts on the Ministerial Level Meeting

### The second meeting of the Forum for Nuclear Cooperation in Asia (FNCA)

*The second FNCA Meeting (The meeting consists of the Ministerial Level Meeting and the Senior Official Level Meeting) was held in Tokyo in November 2001. The details are on the following pages. Mr. Tetsuya Endo, vice chairman of the Atomic Energy Commission of Japan, played an important role in the meeting, reporting on nuclear developments in Japan, and holding discussions with ministerial level participants from the FNCA countries. Mr. Endo expressed his impressions of the meeting.*



**Mr. Tetsuya Endo**  
Vice Chairman  
Atomic Energy Commission  
of Japan

The FNCA Ministerial Level Meeting in Tokyo in November 2001 was the second under the new system (the first was in Bangkok), and was the first since Japan's administrative reorganization. It was thus still in something of a trial-and-error stage. Yet the participating countries gave it high marks - sincerely, I think, even allowing for the tendency of ministers to be complimentary.

The meeting consisted of two parts. In Part I, country papers were presented, and, in Part II, participants exchanged opinions freely on the two main subjects: "Nuclear Energy in Sustainable Development," and "Cooperation in Utilization of Radiation," the latter being an area of cooperation common to all FNCA countries.

The role of nuclear energy in sustainable development is a topic of global interest in these days, and discussions in the meeting were spirited. Although the participants agreed that energy is essential for sustainable development, and that nuclear energy is an important energy source, when it came specifically to recognition of nuclear power as a clean-development mechanism (CDM) under COP, there was no consensus. China,

Japan and Korea, for example, favored that. Others, due to differences in their state or view of nuclear power generation, were rather passive. It was agreed that the issue would be taken up again in the future.

On the second subject, each country explained the state of its own radiation use. All are keenly interested in this subject, and more concrete discussions on specific cooperation, including measures for human resource development, are sure to come.

The FNCA is a once-a-year gathering that allows ministerial level officials from Asia to meet and talk face-to-face, not just at the conference talks, but also bilaterally. This time, Japan had bilateral talks with China, Indonesia and Korea. I strongly hope all participating countries will continue to make the best use of these valuable opportunities.

In any case, I am sure that this second meeting, like the first one, added its new robes to the good start of the FNCA. The next meeting will be in Seoul, where discussions are now proposed provisionally on radiation use and the development of human resources under the theme "Atoms for the Next Generation." It will then return to Tokyo, and is confirmed for Vietnam in 2004. The Philippines and Malaysia have already raised their hands for future sessions - which tells us that the FNCA is indeed taking root. I look forward to its further development, together with RCA and bilateral cooperative efforts.

## Substantial Results Expected

~ The Second FNCA Ministerial Level Meeting in Tokyo ~

On November 29, 2001, the Ministerial Level Meeting (MM) of the second FNCA Meeting was held in Tokyo. The meeting was hosted by the Atomic Energy Commission(AEC) of Japan and the Cabinet Office. About 40 overseas participants including the ministerial level who take in charge of science and technology attended at the meeting from FNCA countries, i.e., Australia, China, Indonesia, Japan, Korea, the Philippines, Malaysia, Thailand, and Vietnam. As Japan hosted the meeting, there were number of representatives from Japan including the Minister of State for Science and Technology Policy, the Chairman and Commissioners from AEC and so forth.

There were impassioned discussions on the importance of the use of nuclear technology in Asia, and on the necessity of cooperation in relevant technology and research.

In his opening address, H. E. Mr. Koji Omi, Japan's Minister of State for Science and Technology Policy,

said: "Indeed, in the circumstances of today, when we think both of the need for energy supply stability as well as the need to preserve the global environment, I believe that promoting the peaceful use of nuclear energy should be an important agenda item for the entire world community." Professor Yoichi Fuji-ie, chairman of the AEC, emphasized that Asian nations were expected to cooperate and promote nuclear technology utilization in the fields of agriculture, food production, medicine and energy - for the sake of people - and that the FNCA would play a great role in that.

One day before the MM, a Senior Official Level Meeting (SOM) took place to prepare for the MM. SOM participants exchanged information on MM agenda items, including follow-up issues from the previous MM. They also examined a report on the Coordinator Meeting, and agreed to give guidance to the Coordinators.

### The Program

**Date:** Nov. 28-29, 2001  
**Place:** Takanawa Prince Hotel  
**Sponsored by:** Atomic Energy Commission (AEC), Cabinet Office

**Wednesday, Nov. 28**

**13:00 - 13:15** Senior Official Level Meeting (SOM)  
**Opening Session**  
**13:15 - 16:45** Round Table Discussion for MM  
 (1) "Nuclear Energy in Sustainable Development"  
 (2) "Cooperation in Utilization of Radiation"  
 "Report on Conclusion of the second FNCA Coordinators Meeting and Progress of FNCA Activities"  
 "Management and Operation of FNCA Activities"  
 (1) Scheme of new Project Proposed and

Selection  
 (2) Management of Senior Official Level Meeting and Coordinator Meeting  
**16:45 -17:00** Closing Session

**Thursday, Nov. 29**

**9:30- 9:40** Ministerial Level Meeting: MM  
**9:40-12:00** Opening Session  
 Country Report Presentation  
**13:30-16:45** Session 2  
 Round Table Discussion  
 "Nuclear Energy in Sustainable Development"  
 "Cooperation in Utilization of Radiation"  
**16:45-17:00** Closing Session  
**18:00-** Press Conference



H.E Mr Omi, Minister of state for Science and Technology gave the congratulatory address



Prof. Fuji-ie, Chairman of AEC, gave the welcome address.



The ministerial level participants were assembled

**Round-Table Discussion**

MM representatives then took part in spirited Round-Table Discussions on the two agenda topics: “Nuclear Energy in Sustainable Development” and “Cooperation in Utilization of Radiation.”

They agreed that nuclear energy would play a very important role in sustainable development and energy strategies. It was recognized, however, that its use should be premised on secured safety, non-proliferation of nuclear weapon and acceptance by the public.

While representatives of Korea, China and Japan spoke out positively in support of nuclear power generation being recognized as a clean development mechanism (CDM), other a few representatives were rather passive, and the issue is to be the subject of further discussions.

On the utilization of radiation - a subject of clear common interest to all the participating countries - its impor-

tance was emphasized to be given the extent of possible contributions to human welfare through applications in agriculture/food, medicine, industry and environmental protection. It was particularly recognized that cooperation within the FNCA framework should be further strengthened, and that, in doing so, cooperation with IAEA/Regional Cooperation Agreement in Asia and Pacific Countries (RCA) as well as bilateral cooperative efforts should be enhanced to achieve goals most effectively.

**Approval of New Projects**

Three new projects - “Application of Electron Accelerator,” “Tc-99m Generator Production” and “Production and Use of Bio-Fertilizer” - were presented to the MM and approved, after discussion at the SOM. They will be officially implemented from 2002.

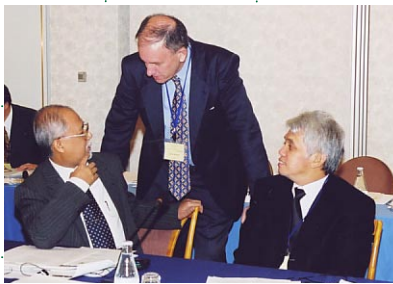
**Participants in the Ministerial Level Meeting**



Commissioners, Atomic Energy Commission of Japan



Representative, Korea



Australian representative speaking to Indonesian representatives



Representative, Thailand



Coordinator, Japan



Representatives, Malaysia



Representatives, Vietnam



Representatives, China



Representatives, the Philippines



## Current Status and Policy on Nuclear Development in FNCA Countries

From the statements by the heads of delegations at the FNCA MM



**Vietnam**  
**H.E. Dr. Hoang Van Huay**  
*Deputy Minister  
 Ministry of Science,  
 Technology and  
 Environment*

### *“Aiming to introduce the first nuclear power plant in about 2015”*

Vietnam plans to introduce 1,200-4,000 MW of nuclear generating capacity in about 2015, and is now considering six possible sites for the construction.

The government will submit a report on the results of a comprehensive feasibility study to the National Assembly and the Leaders of the Communist Party for consideration and decision in 2003. To this end, National Steering Committee on Nuclear Power will be established to conduct feasibility study, and cooperation by FNCA countries will be appreciated.

Vietnam has officially participated in the FNCA since 1996, getting benefits to the country. The country is now under the program to reform and revitalize its science and technology, and its basic position is to carry out research useful for industrialization and modernization, including nuclear technology.



**Thailand**  
**Mr. Kriengkorn  
 Bejrakputra**  
*Secretary-General  
 Office of Atomic Energy for  
 Peace*

### *“Constructing a 10-MW research reactor”*

The most important task of the Office of Atomic Energy for Peace (OAEP) is building a 10MW research reactor in the new Ongkarak Nuclear Research Center. Three major facilities in the center are to be constructed by companies from three countries - the reactor by the General Atomics Co. of the U.S., a radioisotope and radio-pharmaceutical manufacturing facility by the Australian Nuclear Science and Technology Organisation, and a centralized radioactive waste processing and storage facility by Hitachi Ltd. of Japan. A detailed design has been completed and construction will commence soon.

Meanwhile, in 2002, the Office of Atomic Energy for

Peace will be split into two: The “Office of Atomic Energy for Peace,” to be responsible for nuclear policy and safety regulation, and the “Nuclear Technology Research Institute of Thailand,” to be responsible for R&D and services.

Any decision on nuclear power will remain on hold for one to two years, pending a better economic outlook. It is important that public acceptance and a policy on treatment/disposal of radioactive waste be made clear first.

Utilization of radiation has proven to be useful in public health, agriculture, and industry.



**The Philippines**  
**Dr. Rogelio A.  
 Panlasigui**  
*Undersecretary  
 Department of Science and  
 Technology*

### *“Harnessing nuclear technology to challenge poverty”*

About 40% of the Philippine population is still poor, and the number is increasing. Nuclear technology should be as an important tool for reducing poverty.

For example, in Mindanao, plant mutation breeding is being applied in order to meet the need, for more food, and radioisotope technology has been introduced to improve efficiency in using underground water.

Also, in Guimaras Island, a project to eliminate fruit flies is under way using the sterile-insect technique. If it is successful, mangoes produced on the island could be exported, which would have a considerable economic benefit.





**Malaysia**  
**H.E.**  
**Dato' Seri Law Hieng Ding**  
*Minister of Science,  
Technology and the  
Environment*

### *“Enhancing linkages between nuclear technology and end users”*

Nuclear science and technology already play important roles in achieving Malaysian national targets in the areas of medicine, agriculture, industry, health and environmental protection. There is no plans to introduce nuclear power in Malaysia.

The 8th Malaysia Plan (2001-2005) includes plans to establish a medical cyclotron and a gamma greenhouse for mutation breeding.

Researches and development of nuclear technology have been successfully linked to domestic end users, and services related to nuclear technology are provided to 1,800 customers. Also, the Malaysian Institute for Nuclear Technology Research (MINT) constructed a technology park to commercialize technology that it possesses. Profits from products and services in 2000 reached about 30% of the total MINT operating budget, allowing reinvestment in research and development.



**Korea**  
**H.E.**  
**Mr. Kim Young-Hwan**  
*Minister of Science and  
Technology*

### *“Sustainable development and nuclear energy”*

Following up on the Kyoto Protocol, the use of nuclear power is important to control the emission of greenhouse gases. In terms of nuclear power in sustainable development, a 300 MW class nuclear reactor known as the System-integrated Modular Advanced Reactor (SMART) that Korea is now developing will be able to provide useful information for other FNCA countries. Korea has decided to emphasize further utilization of radiation and radioisotopes, particularly for health care. Safety must be guaranteed in using radiation and radioisotopes.

Korea has been actively involved in international cooperative activities, including opening an IAEA/RCA regional office and proposing establishment of an “International Nuclear University” for the next generation under the IAEA.



**Japan**  
**Mr. Tetsuya Endo**  
*Vice-Chairman  
Atomic Energy Commission*

### *“Expecting the Asian region to become a global center of nuclear use”*

In carrying out nuclear development in Japan, the understanding and cooperation of publics in the local communities of the nuclear power plant sites, has become more important than ever before. At the same time, maintaining the commitment to the peaceful use of nuclear power and to the nuclear non-proliferation regime is extremely important to the international community.

Japan pursues completion of the nuclear fuel cycle, assuming that nuclear power generation, which provides some 35% of total electricity power, to be a key power source for increasing energy self-sufficiency and supply stability.

To further promote the use of radiation, Japan should be engaged in research cooperation, not only in Japan, but also in the international community, particularly in Asia. Japan foresees the Asian region becoming one of the three global centers of nuclear use, together with North America and Europe.



**Indonesia**  
**H.E.**  
**Mr. M. Hatta Rajasa**  
*Minister of State for  
Research and Technology*

### *“Revitalization of nuclear energy activities”*

Indonesia is making every effort for the application of nuclear technology to improve the welfare of its people, focusing on their most urgent needs. The highest interest is in mutation breeding of rice, wheat and sorghum; human resource development by nuclear education; accelerator technology in human health, industry, and environment; and energy for sustainable development.

Nuclear power should be a certain part of the energy mix in order to cope with the 10% annual increase in energy demand.

Issues of energy strategy and environmental problems should be further taken up within the FNCA to clarify the role of nuclear power.



**China**  
**Mr. Zhang Huazhu**  
*Chairman  
China Atomic Energy  
Authority*

### ***“Nuclear power generation to be 2.5% of electricity total by 2005”***

In China, at the beginning of the 1990's, three nuclear power plants (total 2,100 MW) began operation. At present, eight more reactors (total 6,600 MW) are under construction at four sites. By 2005, nuclear power capacity will be 8,700 MW, supplying 2.5% of total power generation.

China has acquired the ability to design and build a 1,000 MW class PWR on its own.

An important Chinese policy in nuclear R&D is participation in international projects related to PWR's, including passive safety features, and new-generation high-temperature gas-cooled reactors and fast reactors.

In the application of nuclear technology, China has made a considerable progress in agriculture, medicine and industry. Radiation has also been used in high-tech industries since the 1990's.



**Australia**  
**Mr. John Roland**  
*Director  
Government and Public  
Affairs  
Australian Nuclear Science  
and Technology  
Organisation*

### ***“Replacing research reactor”***

At the Lucas Heights Research Center of the Australian Nuclear Science and Technology Organisation, preparatory work to replace the HIFAR reactor (20 MW) is under way. Actual work will begin upon approval of the construction, and the completion of the new reactor will be in January, 2006.

In January, 2001, a site was designated in the central-north of South Australia Province as suitable for disposal of low-level radioactive waste. Selection of feasible sites for a medium-level radioactive waste storage facility has been initiated.

Regarding the cooperation with IAEA, Australia is the first country that has introduced the integrated safeguards. This safeguards is based on the classical one applied since the 1970's and has been improved with strengthened safeguards measures aimed at identifying any non peaceful activities after the discovery of Iraq's clandestine nuclear weapon program.

## **Chairman's Summary of the second FNCA Meeting**

1. The second meeting of the Forum for Nuclear Cooperation in Asia (FNCA) was held in Tokyo, on the 28th and 29th of November 2001. Ministers and Senior Officials responsible for peaceful nuclear research, development and utilization from nine Asian countries - Australia, the People's Republic of China, the Republic of Indonesia, the Republic of Korea, Malaysia, the Republic of the Philippines, the Kingdom of Thailand, the Socialist Republic of Vietnam and Japan - attended and took part. Ministerial level Meeting began with an opening address by H. E. Mr. Koji Omi, Minister of State for Science and Technology Policy of Japan. A series of meaningful discussions followed.
2. Each participating country presented its country report at Session 1 in the morning of the 29th. Because of the diversity of those countries in terms of nuclear technology, the country reports covered manifold topics. Each country explained its latest utilization of and policies of nuclear technology. Each country also mentioned its own activities in FNCA. All countries again recognized the importance of cooperation among them in the field of nuclear technology, and they restated the necessity of improving further cooperation in this field. In this context, they referred to the importance of FNCA's role in cooperation.
3. Roundtable discussions were held in the sessions in the afternoon of the 29th. The first subject, "Nuclear Energy in Sustainable Development," was discussed in Session 2. Japan made lead-off presentation on the necessity of simultaneous achievement of the 3E's: "Economic Growth," "Energy Security" and "Environmental Protection." After an active discussion, the participants agreed on the following statements:
  - 1) All participating countries recognize the close linkage between energy and sustainable development.
  - 2) Nuclear energy is recognized as one important energy source; the importance of safe operation, public acceptance, non-proliferation and certain other preconditions are also recognized and

- emphasized.
- 3) The relationship between CDM and nuclear energy was discussed and will be further examined.
  4. For the second subject, "Cooperation in Utilization of Radiation," Japan made lead-off presentation in Session 3. Because this subject includes many items common to the participating countries, they reported on activities in their individual countries, and were in general agreement with the following:
    - 1) Utilization of radiation should be aimed at improving human welfare and shares broad connections with the areas of environmental protection, medical science, agriculture including food irradiation, and industry (An interesting suggestion was made, that utilization of radiation could be an important tool for overcoming people's negative perceptions of nuclear technology).
    - 2) Cooperation in this field should be magnified in the future, and must include consideration of relationships to other organizations, such as the RCA, the World Bank, the United Nations, and various bilateral relationships.
  5. The third meeting will be held in Seoul in the autumn of 2002 (co-hosted by Atomic Energy Commission of Japan). The delegation of the Republic of Korea announced that the theme of the meeting in Seoul would be "Atoms for the Next Generation". The fourth meeting will be held in Japan in 2003. The meeting also agreed that the fifth meeting would be held in the Socialist Republic of Vietnam in 2004.

## Stronger Partnership with Demand Driven Policy ~ The third Coordinator Meeting Commend Progress of Projects ~

### *Record of the Coordinator Meeting*

The Third Coordinator Meeting (CM) was held on March 6 – 8, 2002 in Tokyo hosted by the Cabinet Office (CO) and the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan.



Participants in memory of the third CRD meeting

Seventeen overseas participants from eight FNCA countries i.e., Australia, China, Indonesia, Korea, The Philippines, Malaysia, Thailand and Vietnam were assembled. The coordinators to be main representatives in each country discussed actively regarding FNCA activities.

At the opening session, the opening speech was presented by Dr. Suelo Machi, FNCA Coordinator of Japan and Mr. Tetsuya Endo, Vice Chairman of Atomic Energy Commission (AEC) of Japan, gave the welcome remarks.

The following the report of outcome of the Second FNCA Meeting by the FNCA Coordinator of Japan, the representative of each country presented the country

report on progress of the FNCA cooperation activities.

And projects leaders reviewed the on-going projects in the eight fields of cooperative activities, and reported the future plan.

Especially, the projects on Public Information of Nuclear Energy (PI) and on Human Resources Development were discussed how to proceed the future activities.

As issues carried over from the second FNCA Coordinator Meeting, issues on "Sustainable Development and Nuclear Energy in Asia" and "Asian Institute of Nuclear Science and Technology (AINST)" was also discussed.

Furthermore, newly projects from Vietnam and Indonesia were proposed and agreed to be discussed the possibility of the implementation.

The FNCA Coordinator of Japan presented issues on operation of the FNCA activities carried forward from the second FNCA Meeting, particularly the role of a lead country, duration of a project, and the proposal and selection process for a project.

Finally, the Korean delegation reported on the preparation of the third FNCA Meeting to be held in Seoul, Korea tentatively on October 30 - 31, 2002, with optional technical visit on October 29. The theme of the Meeting will be "Atoms for the Next Generation".





Discussing a new turn in the field of PI & HRD

## The Program

**Date:** March 6 - 8, 2002  
**Place:** Tokyo Grand Hotel  
**Sponsored by:** The Cabinet Office(CO) and The Ministry of Education, Culture, Sports, Science and Technology(MEXT) of Japan  
**Secretariat:** Japan Atomic Industrial Forum Inc.(JAIF)

### Wednesday, March 6

#### Opening Session

**Session 1:** Review on the Outcome of the Second FNCA Meeting

**Session 2:** Country Report on Progress of the FNCA Cooperation Activities:

**Session 3:** Progress and Present Status of Projects Part 1

### Thursday, March 7

**Session 3:** (continued)

#### Overall Discussion on Session 3

**Session 4:** Policy and Plan of Activities on Public Information of Nuclear Energy and Human Resources Development

### Friday, March 8

**Session 5:** Issues Carried Over from the Second FNCA Coordinator Meeting

- 1) Sustainable Development and Nuclear Energy in Asia
- 2) Asia Institute for Nuclear Science and Technology (AINST)

**Session 6:** Proposal of New Project

**Session 7:** Operation of Cooperation Activities under the Framework of FNCA

**Session 8:** Discussion on Draft Minutes

**Announcement:** Information on the Preparation of the Third FNCA Meeting

#### Wrap-up Session

## Reports on FNCA cooperative activities by each country

In session 2, the representative of each country presented the country report. The statements which need following up are as follows:

- (1) The representative of Australia pointed out the importance of "ownership" as motivating factor to the successful outcome of the project. He also underscored that the FNCA program should be constantly reviewed in order not to be duplicated with those being carried out by the IAEA-TC and RCA. The FNCA Coordinator of China mentioned that

Chinese Government has promised to host workshops or seminars at least in one technical field each year and try its best to do more contribution to the cooperation.

- (2) The FNCA Coordinators of Indonesia and Vietnam proposed "Nuclear Instrumentation Maintenance Network" and "Marine Environmental Pollution Research and Monitoring using Nuclear and Nuclear-related Analytical Techniques and FNCA Database," respectively which were discussed in Session 6.
- (3) The representative of Korea mentioned the need of establishment of a Nuclear Liability Scheme in the FNCA countries. The FNCA Coordinator of Thailand mentioned that liability scheme for radiation safety is equally important.
- (4) The FNCA Coordinator of Malaysia mentioned that his government would consider to be a volunteer country for spent radiation source management in the future.
- (5) The FNCA Coordinator of the Philippines offered to host the Workshop (WS) on Application of Radioisotopes and Radiation for Agriculture in 2003 and the WS on Nuclear Safety Culture in 2003. She proposed that the Government of the Philippines would host the Seventh FNCA Meeting in 2006.
- (6) The FNCA Coordinator of Thailand offered to host the WS on Human Resource Development in 2003.

## Progress and present status of eight projects

In session 3, a review of the on-going projects in the eight fields of cooperative activities was undertaken, and future work plan was approved.

Important subjects discussed are listed in the following.

### Utilization of Research Reactors

< Utilization of Research Reactors in General >

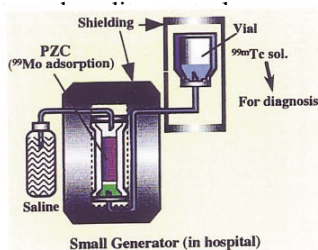
- Important points over the utilization of research reactors are:
  - a. Safe operation and Maintenance
  - b. Decommissioning
  - c. Expanding the fields of utilization

< Tc-99m Generator Sub-Project >

- Demonstration of Tc generator production using the PZC will be conducted in November, 2002.
- Safety evaluation for various pre-clinical tests is important.
- The PZC method has advantages over the gel method



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Conceptual drawing of the Tc generator using PZC

< Nuclear Activation Analysis Sub-Project >

- With the help of an expert of China, Ko-method application software for the FNCA countries will be developed. Sampling of air particulate started in January 2002.
- Linkage with a relevant project of the IAEA/RCA is important. The RCA project is focusing on PM-10.
- Analysis and measurement of PM-2.5 sampler is more relevant to health concern. Ko-method should be developed to improve efficiency of NAA.

< Neutron Scattering Sub-Project >

- Target materials for this project were added to cover natural polymers in addition to the natural rubber thermoplastic elastomer.

**Application of Radioisotopes and Radiation for Agricultural Use**

< Plant Mutation Breeding Project >

- Updating of the Mutant Breeding (MB) Database is undergone.
- The Mutant Stock Repositories (MSRs) in Thailand and in the Philippines are being operated.
- A Mutation Breeding Laboratory Manual (MBLM) is at editorial stage with cooperation of the Philippines.
- A project on the Multilateral Research Program has been started this March for drought tolerance of soybean, sorghum and sugarcane.

< Bio-Fertilizer Project >

- Result of the bio-fertilizer application in Thailand has been very successful.
- Radiation sterilization of carrier of rhizobia is an



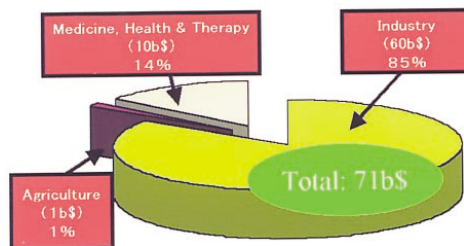
Bio-fertilizer used in Indonesia

important element of bio-fertilizer production.

**Industrial Application**

< Application of Low Energy Electron Accelerator >

- The work plan was formulated at the First FNCA Workshop in January - February, 2002 at Takasaki JAFRI, Japan

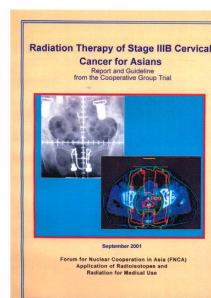


Economic Scale of Utilization of Radiation in Japan (FY 1997)

**Application of Radioisotopes and Radiation for Medical Use**

< Radiation Oncology >

- Result of application of the standardized protocol for uterine cervical cancer (CERVIXIII B) proved excellent result of five year survival rate and local control rate of 53.7% and 81.5% respectively, through the joint study by eight FNCA countries. Dissemination of the protocol at seminar with use of newly published guidebook titled "Radiation Therapy of Stage III B Cervical Cancer for Asians" is strongly recommended. Further cooperation with the IAEA/RCA is also recommended.
- The QA/QC of radiation dosimetry at medical practice is important, and personnel exchange seems effective to improve it.



The standardized protocol for uterine cervical cancer was published

**Public Information of Nuclear Energy (PI)**

- At the FNCA PI Project Leaders Meeting held in December, 2001 in Quezon, the Philippines, activities of information network called AsiaNNet were appreciated and agreed to be strengthened by the FNCA countries' effort.
- The Regional Speakers' Bureau (RSB) will provide

support of PI activities in FNCA countries, by sending lecturers. The FNCA countries are encouraged to hold events for PI purposes.

- A joint survey for high school students on application of radioisotopes and radiation is being prepared.
- PI activities should be led by women more actively.
- Communication with journalism is very important issue.
- Malaysia plans to hold the PI Project Leader Meeting in conjunction with the International Nuclear Conference 2002 (INC'02).



Opening session of the Atomic Energy Week Celebration

### Human Resources Development(HRD)

- At the FNCA Workshop on HRD held in October-November, 2001 in Daejeon, Korea, important issues, like promotion of the mutual support, HRD for young generation, utilization of personnel exchange programs, exchange of education materials, and "Asian Institute of Nuclear Science and Technology (AINST)" were discussed.



The participants discussed the future cooperation for HRD in Korea in 2001

### Nuclear Safety Culture(NSC)

- At the FNCA 2001 Workshop on NSC in September, 2001 in Tokyo, introduction of peer review or mutual assessment on achievement of nuclear safety culture of research reactor was proposed.
- Vietnam volunteered to have the peer review on safety culture of research reactor in 2002 in conjunction with the WS in Dalat.
- Difference between operation of the nuclear power



Technical Tour to the Tokai Works conducted during the NSC workshop in 2001

plant and that of the research reactor should be appropriately reflected in the safety culture.

- Need of introduction of safety culture of radiation and radioisotopes should be investigated.

### Radioactive Waste Management(RWM)

- Cooperation with the IAEA to have synergy of activities is suggested.
- Under the Workshop, a sub-meeting is being used for education of young generation.
- A sub-meeting for TENORM, Technologically Enhanced, Naturally Occurring Radioactive Material, is also discussed.
- The newest version of the Newsletter of a project was just published by Vietnam that organized the last Workshop in December 2001.
- Achievement of the Spent Radiation Source (SRS) Management Task Group sub-project with the Philippines in July, 2001 and with Thailand in August 2001 was proven mutually beneficial, and this result should be commonly shared by the other FNCA countries.

Consolidated report will be published in 2002.



2001 FNCA WORKSHOP ON RADIOACTIVE WASTE MANAGEMENT  
DECEMBER 4-7, 2001 DALAT, VIETNAM

#### THE FNCA WORKSHEET 2001

The FNCA 2001 Workshop on Radioactive Waste Management was held from Dec. 4-7, 2001, in Dalat, Vietnam by Vietnam Atomic Energy Commission (VAEC) and the Ministry of Education, Culture, Sport, Science and Technology (MEST) of Japan, in cooperation with Japan Atomic Industrial Forum, Inc. (JAIF).

Representatives involved in policy making, regulation, and R&D on RWM from the nine countries under the framework of the FNCA (i.e. Australia,

China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand and Vietnam) attended the Workshop.

In the Workshop, the draft of the consolidated report on RWM was presented and discussed at the Round Table Discussion.

The Sub-meeting on SRS storage and TENORM was held. Mutual understandings on both topics were deepened and information exchanges were achieved. Round Table Discussions were held on SRS management, based on the interim report of the SRS management task group. Reports were given by the Philippines and Thailand.

RWM Newsletter

## Key issues raised by the Project Leaders on Projects “Public Information of Nuclear Energy (PI)” and on “HRD” were discussed.

### Public Information of Nuclear Energy

The linkage between the joint survey and national information dissemination scheme was extensively discussed. The meeting agreed that the linkage should be reflected in the current draft document by adding “the analysis of the result of the joint survey should be used to formulate and adjust to national public information scheme” to proposed plan for the joint survey. Furthermore, the meeting also suggested the linkage between regional speakers bureau and national public information activities should be coordinated. The strategic plan for public information was agreed to be submitted to the Third FNCA Meeting for endorsement.

### Human Resource Development

The proposal on strategic plan was discussed extensively. The meeting endorsed that the survey of basic data on HRD in each FNCA country be conducted at the earliest possible time. The meeting agreed that the overall strategic plan should be revised to reflect the discussion and be submitted to the Third FNCA Meeting for endorsement.

The CM agreed to recommend to the Third FNCA

Meeting for adoption of a project on “Sustainable Development and Nuclear Energy in Asia”. The FNCA Coordinators of China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand, and Vietnam supported the project. A seminar on CDM of the Kyoto Protocol should be added as an activity of the project.

The proposal for the “Asian Institute of Nuclear Science and Technology (AINST)” was discussed. The meeting agreed to further discuss the proposal under the framework of the strategic plan on HRD.

Furthermore, two new proposals were discussed, i.e. “Marine Environmental Pollution Research and Monitoring using Nuclear and Nuclear-related Analytical Techniques and FNCA Database” by Vietnam and “Nuclear Instrumentation Maintenance Network” by Indonesia. The meeting agreed that the FNCA Coordinator of Japan should consult with the IAEA to avoid duplication and to enhance complementarily, and to report the result for possible initiation to the FNCA Coordinators for comments and suggestions.

### Guideline for the management of the projects

The FNCA Coordinator of Japan presented issues on operation of the FNCA activities carried forward from the Second FNCA Meeting, particularly the role of a lead country, duration of a project, and the proposal and selection process for a project.

## Tentative Schedule for Workshops/Meetings under the FNCA Framework

WS/Meeting		FY2001	FY2002	FY2003
FNCA Meeting		Japan (November) SOM: November 28 MM: November 29	3rd Korea	4th Japan
Coordinators Meeting		Japan (March 6-8)	Japan	
Utilization of Research Reactor	WS	WS: China (November 5-9)	WS: Indonesia	
	Tc-99m		SWS: Indonesia	
	NAA		SWS: Indonesia	
	NS			M: Indonesia or Japan
Application of Radioisotopes and Radiation for Agriculture	MB WS	WS: Thailand (August 20-24)	WS: China (August 19-23)	WS: The Philippines
	Bio-Fertilizer			
	Multilateral Research Program	M: Indonesia (February 25-March 1, 2002)		
Application of Radioisotopes and Radiation for Medical Use	WS	Malaysia (January 15-18, 2002)	WS: Japan	
Public Information of Nuclear Energy	PLM	PLM: The Philippines (December 10-11)	PLM: Malaysia (October 15-17)	
	Support to PI Activities	in the Philippines		
Radioactive Waste Management	WS	WS: Vietnam (December 4-7)	WS: Korea (November 18-22)	WS: Indonesia
	SRS Management Task Group	M: The Philippines (July 30-August 3) M: Thailand (August 20-24)	M: Korea (August 26-30) M: Indonesia	
Nuclear Safety Culture		WS: Japan (September 10-14)	WS: Vietnam (November 12-15)	WS: The Philippines
Human Resources Development		WS: Korea (October 29-November 1)	WS: The Philippines *Modified after 3rd CM	WS: Thailand
Application of Electron Accelerator		WS: Japan (January 28-February 1, 2002)	WS: Japan	WS: Malaysia

WS: Workshop SWS: Sub-workshop including Experiments PLM: Project Leader Meeting M: Small-group Meeting or Expert Meeting



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

**Appellation** ; Forum for Nuclear Cooperation in Asia (FNCA)  
**Participating Countries** ; **Australia, China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand and Vietnam.**

**Rationale for the FNCA** ; The Asian region is one of the regions which enjoys the highest economic growth rates in the world. To sustain such growth in the face of limited resources and the need to protect and preserve the environment, the region can benefit from effective utilization of nuclear technology. According to the projections for expansion of nuclear power generation, the region is expected to be one of the three major nuclear-generation centers along with the United States and Europe early in the 21st Century. In addition to nuclear power generation, nuclear applications in fields, such as food and agriculture, human health care, improvement of industrial technology, and environmental protection, are of equal importance in people's daily life.

**Vision Statement** ; “The FNCA is to be recognized as an effective mechanism for enhancing socio-economic development through active regional partnership in the peaceful and safe utilization of nuclear technology”

**Framework** ; The followings are the outline of cooperation.

① **Ministerial Level Meeting** ;

The FNCA Meeting discusses policy issues to enhance regional cooperation and approves/endorse the Action Plan for projects.

② **Coordinator Meeting** ;

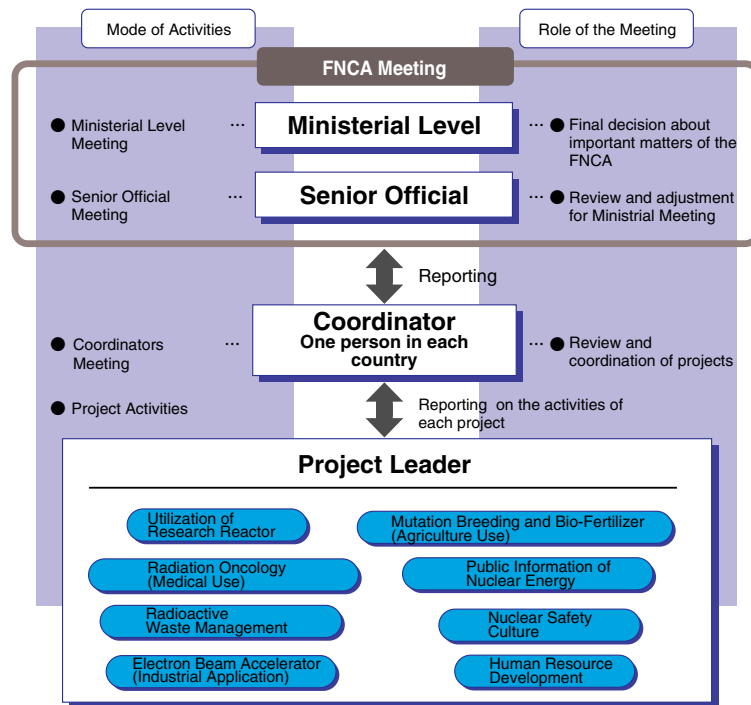
Coordinator Meeting is held once a year to review performance of existing projects, to discuss future plan including new project initiatives and project termination, and to provide clear direction to the projects.

③ **Cooperative activities for each project.**

**History;**

- **March, 1990** ; The first International Conference for Nuclear Cooperation in Asia ( ICNCA ) was held in Tokyo hosted by the Atomic Energy Commission of Japan. — Held annually in Tokyo until 1999.
- **March, 1999** ; The tenth ICNCA was agreed on the developing shift to the Forum for Nuclear Cooperation in Asia (FNCA) .
- **November, 2000** ; The first FNCA Meeting was held in Thailand co-hosted by the Ministry of Science, Technology and Environment of Thailand, and the Atomic Energy Commission of Japan.
- **November, 2001** ; The second FNCA Meeting was held in Tokyo.

**The FNCA Framework**



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