

Forum for Nuclear Cooperation in Asia

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The FNCA Countries proposed 21 New Cooperative Projects - The Second Coordinators Meeting of the FNCA held in Tokyo --

The Second Coordinators Meeting of the Forum for Nuclear Cooperation in Asia (FNCA) was held in Tokyo on March 14 through 16.

Sixteen overseas participants came from the eight member countries of FNCA, i.e., Australia, China, Indonesia, Korea, the Philippines, Malaysia, Thailand and Vietnam. Also present was the RCA Coordinator as an observer from IAEA. There were about 30 people presented from Japan, including Dr. Machi, the FNCA Coordinator of Japan, Mr. Endo as Deputy Chairman of Japan Atomic Energy Commission, Project Leaders, government officials, and representatives from cooperative organizations to the FNCA activities including JAERI, NIRS, and JAIF.

In line with the agreements reached in the First FNCA Meeting held in Bangkok, Thailand in November 2000, this Meeting discussed topics such as FNCA framework

present activities in seven fields under FNCA, and relation with RCA activities. In particular, 13 new projects were proposed by China, Indonesia, Japan, the Philippines, and Vietnam. As many as 21 projects altogether were discussed.

Participants agreed to proceed some proposals such as the production technique of Tc-99m generator, the management technique of spent radiation sources. Some of the proposals of Asian Institute of Nuclear Science and Technology, or Boron Neutron Capture Therapy will be further discussed.

The detail will be shown on the homepage.

The Record of discussion and the tentative 2001 activity schedule developed in the meeting are as shown in page 2 and 3. The personal comments from the representatives of the member countries are summarized in page 3 through 5.

The Program

Tuesday, March 13

Technical tour

Wednesday, March 14

Opening Session

Session 1: Review of the First FNCA Meeting and Follow Work

Session 2: Country Report from Each Country

Session 3: Report and Review on Present Cooperation
Activities and Future Plan

- 1) Review on On-going Cooperation Activities
- 2) Proposal of the New Projects

Thursday, March 15

Session 3: (continued)

3) Wrap-up Discussion

4) Nuclear and Radiation Liabilities

Session 4: Review on the Operation of Cooperation

Activities under FNCA Framework

Friday, March 16

Session 5: The Second FNCA Meeting in Japan

Special Report: The RCA and Its Program

Wrap-up Session

Confirmation of the Record of the meeting



Participants of the Second Coordinators Meeting



RECORD of the Second Coordinators Meeting of the Forum for Nuclear Cooperation in Asia (FNCA)

The Second Coordinators Meeting of the FNCA was held on March 14 through 16,2001 in Tokyo.

The representatives of Australia, China, Indonesia, Japan, Korea, Malaysia, the Philippines, Thailand and Vietnam participated in the meeting. In addition, a representative of the International Atomic Energy Agency attended as an observer.

- 1. The meeting acknowledged the success of The First Forum for Nuclear Cooperation in Asia held in Bangkok on November 10 15, 2000 which;
 - a. adopted the Vision Statement
 - b. set its objectives and philosophy
 - c. adopted the Strategic Plan

The FNCA framework is a partnership which aims at promoting efficient regional cooperation among the nine FNCA countries based upon a common understanding, mutual cooperation, and commitment of resources by the countries to the projects they agree to participate in.

- 2. At the presentation of country reports, the following issues were covered:
 - a. The national nuclear technology program and priority setting in each country
 - b. Linkage of the FNCA activities with the national and international programs
 - c. Options to enhance the impact of the FNCA program
 - d. Obstacles and countermeasures for development of nuclear applications in each country
 - e. Ways to enhance linkage with end-users of nuclear technology
 - f. The Philippines and Thailand suggested that consideration be given to development of a formal instrument for the FNCA.
- 3. A review of the existing projects in the seven fields of cooperation was undertaken and the direction for the future were determined. The importance of the social and economic impact to be achieved through effective and efficient promotion of the cooperative activities was stressed given limited resources. An Action Plan listing the agreed projects and the future activities is attached. (Attachment 1, page 6.)



Opinions were lively exchanged by the representatives of each country

- 4. New project proposals including projects in new fields were evaluated. The outcome is also shown in the Action Plan.
- The Action Plan includes the location of workshops in FY 2001.
- 6. Review of the FNCA Management and Operation was undertaken, particularly, the roles and responsibilities of the FNCA Coordinators and Project Leaders. This resulted in some clarifications and adoption of the paper "FNCA Management and Operation" attached. (Attachment 2, page 7.)
- 7. The RCA Coordinator made a special report on the RCA activities, which led to an exchange of opinions on the desired synergy between the FNCA and the RCA, where appropriate.
- 8. Information was exchanged among the participants on the present status of national nuclear liability scheme in selected countries. The importance of national and international nuclear liability systems is noted.
- Discussion was held about "The Second Forum for Nuclear Cooperation in Asia". The Forum is tentatively scheduled November in Japan. The FNCA Coordinator of Japan will inform the FNCA countries of the details later.

This record of the Second Coordinators Meeting will be reported to the Second FNCA Meeting in coming November in 2001. And "Action Plan" and "FNCA Management and Operation" as the attachment of the RECORD are as shown in page 6 and 7.



Tentative Schedule for FNCA-related Workshops/Meetings

WS/Meeting	Outline of Activities	FY 2001
FNCA Meeting		Japan (November)
Coordinators Meeting		Japan (March)
Utilization of Research Reactor	1 Utilization of Research Reactor	WS : China (November 5-9) *
	2 Establishment and Promotion of Technology for Tc-99m Generator	Explanation at the WS above was
	Production	proposed.
	3 Neutron Activation Analysis	To be discussed in the WS above
	4 Industrial Application of Scattering of Neutron (Using natural rubber)	To be discussed in the WS above
Application of Radioisotopes and Radiation for Agriculture	1 Plant Mutation Breeding	WS : Thailand (August 20-24)
	2 Bio-Fertilizer	To be discussed in the WS above
Application of Radioisotopes and Radiation for	1 Radiotherapy of Uterine Cervix Cancer	WS : Malaysia *
Medical Use		(October 29-November 2)
	2 Radioimmunotherapy (RIT)	To be discussed
Public Information of Nuclear Energy	Support to Public Relations Activities in Each Country (PL Meeting)	M : The Philippines (July)
Radioactive Waste Management	1 Making Consolidated Report	WS : Vietnam (December)
	2 Task Activities for Management System of Used Radiation Source	To be implemented in The
		Philippines and Thailand
Nuclear Safety Culture	Activities for Improvement of Safety Culture	WS : Japan (September)
Human Resources Development	Support to Needs of Each Country and Information Exchange	WS : Korea *
		(October 29 - November 1)
Utilization of Electron Beam Accelerator		M : Japan

WS: Workshop, SWS: Sub-workshop including experiment, M: Small-group Meeting or PL Meeting

Personal comments from the representatives of each country about the Second Coordinators Meeting of the FNCA





Australia
Prof. Helen M. Garnett
Executive Director and
Chief Executive Officer,
Australian Nuclear Science &
Technology Organisation
(ANSTO)

The Second Coordinators Meeting of the FNCA provided a good opportunity to further clarify the expectations of the partner countries involved and the parameters, which determine the operations of the FNCA. I was pleased that the meeting provided an opportunity to restate the roles and responsibilities of the Coordinators and the way in which projects should be scoped and then evaluated, prior to endorsement, and monitored and reviewed, once underway.

The considerations emphasized the fact, that the role of the Coordinator is substantial and requires representation at the highest levels, a view I endorse. From Australia's perspective we were delighted with the buy-in by the Coordinators to the Nuclear Safety Culture project and we hope that the enthusiasm and commitment shown at the meeting is translated into a high level of commitment to the project from all countries in the FNCA.





China
Mr. Li Xiang,
Chief Officer for Regional Cooperation,
Division of Inter-Government and
International Organizations, Department
of International Cooperation,
China Atomic Energy Authority (CAEA)

China will inevitably meet various economic and technological difficulties and problems in further developing nuclear energy and technology for the peaceful utilization. We sincerely wish to exchange and make coorperation widely with other FNCA member countries.

The FNCA is a very important form for the regional cooperation in nuclear field. We hope all the FNCA countries can cherish the opportunities such as the Ministerial Level Meeting, Coordinators Meeting and Workshop to promote practical cooperation under the FNCA framework. FNCA shall give prominence to special features of Asia to avoid overlapping or simple duplication of the work of IAEA and other related international organizations.

^{* :} WS schedule is subject to change depending on the date of FNCA Meeting.





Indonesia
Dr. Bakri Arbie
Deputy Chairman for the
Development of Nuclear
Technology and Energy,
National Nuclear Energy
Agency (BATAN)

The activities are expected to have socio-economic impact to the people in the utilization of nuclear technology as stated in the vision and goals of FNCA, therefore, must have an outcome, which is impact-oriented.

What has been discussed in the Second Coordinators Meeting was very detail, concerning among others, the topics, the schedule, the source of funding as well as the human resources. Indonesia proposes a priority program as follows:

- 1. Mutation breeding of staple food crops especially like sorghum in marginal areas.
- A deeper concern for development of the human resources, due to declining interests of the new generation and students towards Nuclear Science and Technology as well as its Engineering.
- 3. A concern to support energy resources for sustainable development, however this faces a "trilemma", for welfare we need to develop the economy, for developing the economy, we need energy, and for energy, we have to consider the impact to the environment.

BATAN would further wish to propose the following programs:

- a. That member states could start giving considerations on the possibility of nuclear in their energy scenarios for their benefits of all members, as nuclear energy is free from CO₂ emission and the nuclear waste are very well managed.
- b. We propose that small and medium size power reactors that fulfill economical requirements, safety requirements, waste management requirements, as well as proliferation proof, should be of deeper considerations and studied.





Japan
Dr. Sueo Machi
Senior Managing Director,
Japan Atomic Industrial
Forum, Inc. (JAIF)

At the 2nd Coordinators Meeting of the FNCA, I was very pleased to join constructive discussion on the new project proposals. There are 13 new project proposals in the fields of agriculture, human health, human resources development, nuclear energy and environment, and electron beam irradiation system from China, Indonesia, Japan, the Philippines, and Vietnam reflecting partnership among the FNCA countries. The next important step is to effec-

tively implement project plan to achieve the goal through collaboration. In this respect, function of the Coordinator and Project Leaders is so important. It is expected for us to achieve good progress in on-going and new projects to be reported at the Second FNCA Meeting in autumn in Japan with the participation of the ministerial level people and the most senior officials from all the FNCA countries. Taking this opportunity I would again highly appreciate excellent contribution of the FNCA coordinators to the Coordinators Meeting.





Korea
Mr. Kim, Chang-Woo*
Director, Nuclear Safety
Division, Nuclear Energy
Bureau, Ministry of Science
and Technology (MOST)

I think that the FNCA Coordinators Meeting is a key part of the FNCA activities as a linkage between the FNCA Ministerial Meeting and its projects. In this context, I think it was meaningful to review and adopt the FNCA management and operation guideline through this Coordinators Meeting. I expect that the FNCA Management and Operation will be further developed and specified in the future. For example, a detailed guideline for reporting current and new projects, such as reporting form and time, can be developed in detail.

I hope that the FNCA will serve as a practical, mutually beneficial, and cooperative forum in the Asia region.

* proxy for Mr.Yoon, Dong-Nyeol, Director, Nuclear International Cooperation Division, Nuclear Energy Bureau, MOST





Malaysia
Mr. Adnan Bin Haji Khalid
Director, Division of Planning
and External Relations,
Malaysian Institute for
Nuclear Technology
Research (MINT)

Within FNCA we have already established the management structure of the FNCA framework, as well as adopting its vision, objectives, goals and operational strategies.

This year we have successfully reviewed all the ongoing projects as well as evaluating new project proposals. As a result, we were able to identify many common areas of socio-economic interest in the region, established their priorities and set direction for the implementation of the projects. Our emphasis is always on partnership and to utilize our limited resources for optimum impacts to the endusers. We recognised the roles played by other multilateral and regional programs such as the IAEA and RCA and as such we have tried to reduce overlap, hence the complementary nature of the FNCA activities.

With this realization and commitment by member countries, I am very confident that the FNCA will achieve

greater success in promoting safe and peaceful nuclear technology applications in the Asian region.





The Philippines
Dr. Alumanda. M. Dela
Rosa
Acting Director,
Philippine Nuclear Research
Institute (PNRI)

The Coordinators Meeting gives us the opportunity to discuss our respective national nuclear technology program and facilitates the enhancement of the necessary linkages with other regional and international organizations.

The Philippines reiterates its support for the action plan of these existing projects and its future activities. We also staunchly encourage the initiation of the activities in the new areas proposed, especially since they seek to address the evolving concerns of the region. By supporting the cooperation, we firmly believe that each of the participating country benefits by acquiring the means to enhance their strength and also to fortify areas of weakness.

To concretize that regional cooperation, the Philippines strongly advocates the establishment of a formal instrument for the FNCA. This will galvanize inter-governmental commitment to the nuclear cooperation forum and bring formal recognition to the efforts of the region in the safe and peaceful application of nuclear technology.





Thailand
Dr. Manoon Aramrattana
Deputy Secretary-General,
Office of Atomic Energy for
Peace (OAEP)

I am pleased to see more active participation of the Coordinators as partners of cooperation under the frame-

work of the FNCA. There has been a smooth transaction from the Strategic Plan endorsed by the Ministerial Level Meeting in November 2000 into Action Plan at the Second Coordinators Meeting. I am also pleased to see number of new projects being proposed, discussed and concluded objectively. In the over all discussion, I see the emerging new commitment and trend for the FNCA to be carried forward in constructive manners by all participating countries. Consequently, the spirit of cooperation among participating countries is at a new height. Therefore, the results of the meeting are satisfactory and forward looking with Actions Plan for achieving goals and vision of the FNCA.





Vietnam
Mr. Le Doan Phac*
Deputy Director,
Department of International
Relations and Planning,
Vietnam Atomic Energy
Commission (VAEC)

Asian countries have been fully aware of the importance and benefit of the regional cooperation in the nuclear field.

Having fully conceived the important role of the FNCA in strengthening nuclear cooperation in Asia, Vietnam has been taking part in the FNCA projects. We highly appreciate the obtained results under the FNCA framework.

Vietnam hopes that the FNCA should focus activities into areas contributing more significantly to national socio-economic development programs in the region, especially help member states to find technology assistance funding resources. The FNCA should continuously improve and diversify its activities, so that it would become a prestigious cooperation organization in Asia and the world.

Technical Tour to the facilities for radioactive-waste from medical use

The participant visited Takizawa Laboratory of Japan Radioisotope Association in Iwate Prefecture on March 13.

The laboratory is performing processing and storage of waste of the radioisotope for medical use since 1987, and the participants visited the process and waste storage facility in the institution. At Nishina Memorial Cyclotron Center, using the small cyclotron for medical treatments, a positron emitting nuclide is manufactured to be used for diagnosis research.



Study tour at Takizawa Laboratory

^{*} proxy for Dr. Vuong Huu Tan, Acting Chairman, VAEC



RECORD - Attachment 1 - Action Plan -

Seven Fields

1. Utilization of Research Reactor

- a. The Small Angle Neutron Scattering (SANS) project was supported to study thermoplastic elastomers derived from natural rubber and one or two other polymers in connection with properties starting in 2001. The next meeting of the project leaders will be held in 2004.
- b. The Nuclear Activation Analysis (NAA) project proposal should be reviewed to be more complementary with the RCA environmental project by accommodating RCA results as much as possible. The NAA project should focus on (a) establishment of Ko method as a useful analytical tool for a large number of environmental samples and (b) strengthening the linkages with the national authorities for environmental policy, and (c) encouraging installation of a suitable number of monitoring stations for application of Ko method in the future.
- c. The Tc-99m generator project proposal was supported by most of the FNCA countries including China, Indonesia, ROK, Malaysia, the Philippines, Thailand, and Vietnam.
- d. Some countries expressed reservation on the Boron Neutron Capture Therapy (BNCT) proposal by China because the technology has not been proven as an effective method for treatment of brain cancer and skin cancer. The FNCA may be able to hold one small workshop to collect most up-dated information on BNCT involving appropriate experts. The FNCA participants should be limited only from countries which have reactors which can be used for BNCT now or in near future.

2. Application of Radioisotopes and Radiation for Agriculture

- a. Mutation breeding of rice and sorghum is strongly supported as priority items for future activities, noting the program on rice will complement with RCA project. Technical details including project formulation should be discussed at the next workshop.
- b. Most countries support the biofertilizer project provided that it should be complementary with the RCA Project on biofertilizer terminated in 1995. In this regard emphasis will be on the selection of appropriate Rhizobium spp focusing on extensive use of biofertilizer not only for grain legumes but also for forage legumes, rice plant, cover crop for plantation, etc., recognizing its environmental and economic benefits, nuclear techniques should be the key technical component. According to the IAEA report, Thailand is only country using the biofertilizer extensively among the FNCA countries. At the first project meeting, the current status of application of biofertilizer should be reported by participating countries for further discussion and project scoping.

Application of Radioisotopes and Radiation for Medical Use

- The project on radiation therapy of uterine cancer should be continued as proposed and further disseminate the present protocol.
- b. Radioimmunodetection and therapy projects were proposed by China and the Philippines. For the next workshop all nuclear medicine practices for liver and breast cancer treatment and diagnosis should be discussed.

4. Public Information of Nuclear Energy

- a. The FNCA countries are encouraged to share their strategy of national public information program together with suggestions of how they will measure success. The Project Leader Meeting should define specific program to be supported by the FNCA to meet with their specific national needs.
- b. It was also suggested that Project Leader Meeting should have one or two specific topics to be discussed, for example, training in methodology to survey public opinion for public information officers in requested countries.
- c. It is also necessary to identify factors that affect the effectiveness of nuclear-related public information in different culture contexts.

5. Radioactive Waste Management

- a. The project proposal on enhancement of safer management of spent radiation sources is supported, noting there should be close communication with RCA and other IAEA activities. The Philippines and Thailand will be voluntary countries.
- b. The proposal for a consolidated report on radioactive waste management is also supported.

6. Nuclear Safety Culture

- a. This project is strongly supported and continued with an active participation of all the FNCA countries.
- b. The meeting encouraged the Coordinators to urge their national authorities (a) to sign or ratify "Nuclear Safety



Utilization of Research Reactor at BATAN, in Indonesia

Mutation Breeding of Rice on Application of Radioisotopes and Radiation for Agriculture in Vietnam



Convention" and (b) to give strong support to the national plan on safety culture practices.

7. Human Resources Development

- a. Comments were made to focus the activities on the human resources development strategy for enhancement of nuclear safety in particular radiation safety and waste management safety.
- b. Many interventions were made on the proposal of Asian Institute of Nuclear Science and Technology (AINST) proposed by Indonesia. However, a feasibility study on this concept was generally supported to define several possible options including utilization of existing centers of excellence.

New Activities

1. Nuclear Energy and Sustainable Development

This project is proposed by Indonesia and supported by several countries including the Philippines, Thailand and Vietnam. Importance of this project is well recognized by the meeting. However, the specific activities of the proposal should be more clearly defined including work plan to be complementary with extensive IAEA activities on comparative study of nuclear power. Indonesia will elaborate with an additional paper to specify activities and work plan as soon as possible, to be circulated to the FNCA countries. This proposal, then will further be discussed at the Second FNCA Meeting.

2. Utilization of Electron Beam Machine

This project proposed from Japan and Vietnam is supported by most of FNCA countries. Vietnam is not in a position to install accelerator due to funding difficulty. Workshop for demonstration technology can be held in Japan using existing facility. A suggestion was made that the EB system in Japan could be made available as a demonstration plant in FNCA countries on loan basis. It is also proposed to design and assemble a low cost EB system from component parts in FNCA countries to minimize cost using their expertise among the FNCA countries.

3. Nuclear Technique and Sustainable Development of Environment

This project proposal by China covers broad activities. However, China proposed that this project could be performed through the development and utilization of new biofertilizer, like that proposed by Japan and Vietnam, which contributes to protection of soil degradation.



Radiation Therapy at the National Institute of Radiological Science in Japan (include therapy of cervical Cancer)

Discussion with Mass Media include Mr Lee, the former Science Editor of Dong-A Daily Newspaper at Public Information Workshop in Korea

RECORD - Attachment 2 - FNCA Management and Operation -

1. FNCA Meeting

The FNCA management scheme has been agreed at the First FNCA Meeting in Bangkok. The FNCA Meeting involves participation at the ministerial level and the most senior officials, where views are exchanged on policy issues to enhance regional cooperation on the peaceful utilization of nuclear technology. The Action Plan for projects under the FNCA framework is approved/endorsed as appropriate.

2. Coordinators and Coordinators Meeting

National Coordinators are responsible for coordinated implementation of the FNCA projects in their countries. The role includes ensuring effective project management, linkage to the national program and end-users, assurance of funding for the projects in which the country participates, and understanding the potential complementary with other multilateral and bilateral mechanisms. This requires a senior person with authority.

Coordinators Meeting is held once a year to review the performance of existing projects and to discuss future plan including new project initiatives and project termination and to provide clear direction to the projects. The conclusion and recommendation of the Coordinators Meeting should be submitted to the FNCA Meeting for approval or endorsement, as part of Action Plan.

3. Projects and Project Leaders

A project will have clear objectives, milestones, timeframes and work plan including expected outputs and likely outcomes. An overall project report should be presented to the Coordinators Meeting to enable review and subsequent direction.

The Project Leader in each participating country is responsible for formulation and local implementations of the project in their own country, and will work with the Project Leaders of other countries to achieve the project objectives. They will interact regularly with their national FNCA Coordinator. Also the Project Leader will network on a frequent basis and meet face to face regularly, normally once a year, to share results of the cooperative project and ensure effective collaboration and future planning.

Topics of Other Nuclear Cooperation Activities in Japan

The 14th Seminar for Nuclear Administrators took place in Tokyo

The 14th Seminar for Nuclear Administrators was held in Tokyo from January 30 to February 9, 2001. This Seminar was sponsored by Ministry of Education, Culture, Sports, Science and Technology in cooperation with the Japan Atomic Industrial Forum, Inc.

The administrators from nine countries which were Bangladesh, China, Indonesia, Korea, Malaysia, The Philippines, Sri Lanka, Thailand, and Vietnam, participated. At the Seminar, the lectures on various aspects of nuclear administration, nuclear energy development, nuclear safety management, and public acceptance related issues in Japan were provided by Japanese experts and administrators.



Report by a participant from Bangladesh

Also, each participant reported the situation of nuclear development of his/her country.

The participants visited Japanese nuclear related facilities in the intervals of the lecture.

Opinion exchange session on "Promotion of Nuclear Technology Application" was carried out, and frank opinions were exchanged among participants.

Looking Back Our Stay in Japan

Two fellows have been trained in JAIF for six months from last October to the end of March for the cooperation activities of Asia region. They gave brief impressions of the FNCA activities as shown below.



Ms. Wang Huijuan Director, Division of Foreign Affairs, Beijing Institute of Nuclear Engineering

During the six months of training in JAIF, I learned a lot of develop-

ment situation of peaceful application of nuclear energy and technology from participating countries of the FNCA.

I remember my early arrival in Japan, I was puzzled by the following days. I didn't know how to spend six months alone. But now, as I carry rich harvest of my training and experience in Japan and leave the beautiful country, ACC office and Japanese colleagues who are also my friends with providing their kind help for my work and life, I feel that time flies. I will cherish the best memory to farewell to Japan.

After returning to my homeland, I will contribute what I learned from Japan to the Asian regional nuclear cooperation, Meanwhile, I'd like to describe my deep feeling in Japan to my colleagues and friends so that they could further understand the policy, economy, culture and customs of Japan, and contribute to the common career of peaceful application of nuclear energy and technology as well as the friendship between our two people.



Mr.Hoang Van sinh
Expert on Project Management,
Department of Intenational
Relations and Plannning,
Vietnam Atomic Energy
Commission

The first FNCA's structure and mechanism, its Vision Statement, Goals,

Strategic Plan were officially launched. And recently, at the Second Coordinators Meeting, the FNCA management and operation was elucidated and elaborated, especially the role and function of each components, relationships among the components under this framework.

Nonetheless, through discussions, it can be seen that in order to bring the Vision and Strategic Plan into realty, among others, the FNCA should concentrate its attention on the following points:

- All parties should fully comprehend FNCA's structure and mechanism, the role and responsibility of each participating country;
- There should be no duplication/overlap over RCA or other IAEA activities; and,
- (3) Capacity of FNCA counties in the identification of problem, the formulation, evaluation/appraisal, implementation, and assessment of project, should be substantially strengthened and enhanced to meet the highest standards (this point can be considered to be the top priority to be resolved, and as a decisive factor for more effective FNCA).

Asia Cooperation Center

Japan Atomic Industrial Forum, Inc.