

**OVERVIEW**  
**OF THE EBP ACTIVITIES**  
**SINCE OCTOBER 1998**

**EXTRABUDGETARY PROGRAMME ON THE**  
**SAFETY OF NUCLEAR INSTALLATIONS**  
**IN SOUTH EAST ASIA,**  
**PACIFIC AND FAR EAST COUNTRIES**

## **International Atomic Energy Agency**

### **Extrabudgetary Programme (EBP) on the Safety of Nuclear Installations in the South East Asia, Pacific and Far East Countries**

#### **OVERVIEW OF THE EBP ACTIVITIES SINCE OCTOBER 1998**

##### **I. INTRODUCTION**

The last Advisory Group Meeting (AGM) for the EBP, which was held at the IAEA Headquarters in Vienna on October 5-6, 1998, reviewed the scope of IAEA activities proposed by the Secretariat for 1999-2000. In addition, the AGM requested the Secretariat to prepare a Progress Report, including the evaluation of new requests presented during the AGM, a revised action plan on the basis of the evaluation, and the activities implemented from October 1998 until March 1999. The Progress Report (EBP-ASIA-14) was sent at the end of March 1999, to the representatives from countries participating in the EBP.

This document describes the activities from April to September 1999 and the activities planned after this AGM up to the end of 1999.

##### **II. ACTIVITIES IMPLEMENTED FROM APRIL TO SEPTEMBER 1999**

This section reviews the outline and results of the activities implemented after the Progress Report was issued in March 1999.

###### **II.1. PROGRAMME MANAGEMENT**

###### **II.1.1. Database**

A database has been developed to manage the entire set of activities of the EBP. For each activity, besides the basic managerial information, this database includes: the Country Nuclear Safety Profiles (CNSPs), the objectives of each activity, the results achieved and the full text of the related reports.

## **II.1.2. Update of CNSP**

The update of the CNSPs is a continuous process. The main sources of information for this update are:

- The technical visits and experts' mission carried out in the framework of the EBP;
- Other Agency missions; and
- New information provided by each country.

In 1999, the CNSPs of China, Indonesia and Viet Nam have been updated.

## **II.2. REGIONAL ACTIVITIES**

### **II.2.1. Training Workshop on the Consolidation of an Adequate Legal Framework for the Safe and Peaceful Use of Nuclear Energy**

Date: 25-28 May 1999

Place: Taejon, Republic of Korea

Objective and results:

This workshop was organized by the IAEA and hosted by the Korea Institute of Nuclear Safety (KINS).

The objective of the workshop, which was the first one on nuclear legislation related issues organized by the IAEA for countries of East Asia and the Pacific region, was to provide training to the participants from these countries and exchange information on legal framework for the safe and peaceful use of nuclear energy. The workshop focused on matters related to the legal framework governing the safety of radiation protection and safety of radiation sources, and legal issues related to the physical protection of nuclear material and security of sources.

The workshop encompassed presentations from IAEA experts on selected topics, presentation from participants on their national legal framework, and on their national experiences and practical exercises involving the interaction between country participants and the IAEA team. Through the workshop, the participants increased their awareness of the importance of having an adequate legal framework governing the safe and peaceful uses of nuclear energy. The country participants identified potential areas in which adequate legislation is needed in their countries in following areas: strengthening of the Regulatory Authority; safety of radioactive waste management; transport of nuclear material; physical protection; emergency preparedness and response and liability for nuclear damage.

The workshop was done and funded by Department of Technical Co-operation (TC) and Legal Division (MTLG) of the IAEA.

## II.3. NATIONAL ACTIVITIES

### II.3.1. China

#### *(i) Technical Visit for Development of Country Nuclear Safety Profile*

Date: 10-14 May 1999

Place: Beijing, China

#### Objective and results:

The objective of this visit was to review the second draft of the Country Nuclear Safety Profile (CNSP) for China and to collect information to complete the chapter on research reactors.

The mission visited the China Atomic Energy Authority (CAEA), the National Nuclear Safety Administration (NNSA), China National Nuclear Corporation (CNNC), and the Institute of Nuclear Energy Technology (INET).

Apart from small changes, the Chinese counterparts agreed with the updated CNSP for China. At INET, information about research reactors, which was a part of the CNSP, was also collected.

#### *(ii) Workshop on External Events PSA*

Date: 17-21 May 1999

Place: Beijing, China

#### Objective and results:

This workshop was on “External events and external events PSA” as related to the Lianyungang NPP (LNPP). During the workshop, following the presentations by IAEA and outside experts, several key issues to the LNPP including probabilistic seismic hazard assessment and evaluation of coastal flooding have been discussed.

The workshop was of great interest to all the participating organizations. The main benefit of the workshop was the preparation for the external events PSA of the LNPP and evaluation of external hazards for the LNPP in line with international practice and the IAEA Safety Guides.

*(iii) Group Training on Methods and Tools for Training Operations Personnel*

Date: 12-23 April

Place: Madrid, Spain

Objective and results:

The Spanish company, Tecnatom,S.A, hosted this training which intended to enhance personnel training programme and operational capabilities in China. Experts from governmental organization and senior managers responsible for operation/training at nuclear power plants in China attended. The training was financially supported by Spain in the frame of the EBP.

The training focused on:

- Personnel training methodology and implementation, including general training policy, training programme, training tools, organization of training, evaluation of training system
- Simulation technologies, including modelling tools, computer platforms, organization and methodology for simulator projects
- Operation support, including emergency planning, accident management, man-machine interface

The training was considered very useful by the Chinese participants.

### **II.3.2. Indonesia**

*(i) Pre-IRRT Mission for BAPETEN*

Date: 21-25 June 1999

Place: Jakarta, Indonesia

Objective:

This mission was focused on the regulatory practices for the existing research reactors and any future nuclear power plant option that may be chosen. The main objective of the mission was to assist the Indonesian regulatory body in its future development when and if Indonesia decides to embark on a nuclear power programme.

Results:

Discussions were far ranging covering existing arrangements and future plans to adopt the nuclear option, the whole scope of the legal and governmental infrastructure, and the further development of an effective regulatory body. The IRRT mission realized that Indonesia has taken the necessary steps in establishing an independent regulatory body by separating the regulatory body and promotional functions. Nevertheless, much further work needs to be done. The following priorities have been identified by the IRRT members:

- In view of the present and possible future nuclear power programme development in Indonesia, the Government should recognize the prime importance of a strong, competent and well resourced regulatory body; its adequate staffing is essential.
- The legislative framework both for the operation of the existing nuclear facilities and for the any future nuclear power reactors should be further developed with high priority, based on Act No.10, 1997 on Nuclear Energy.
- A comprehensive training programme on nuclear safety issues should be developed and implemented as soon as possible, to cope with present and any future needs for qualified personnel.

### **II.3.3. Thailand**

#### *(i) Technical Visit*

Date: 17-18 May 1999

Place: Bangkok, Thailand

Results:

A lecture was delivered by Ms. A. Carnino, Director of the IAEA's Division of Nuclear Installation Safety on International Regulatory Approaches and Function of a Regulatory Body. The lecture was followed by an exchange of information on the future strategy for improving the regulatory function in Thailand. Relevant information was collected for updating the CNSP of Thailand.

In addition, it was agreed to conduct a National Seminar on Regulatory Function. The Seminar will be held on 22-26 November 1999.

#### *(ii) Review implementation of IAEA recommendation related to PSAR (TC)*

Date: 21-29 June 1999

Place: Bangkok, Thailand

Objective and results:

The main objective of this mission was to review the response of the reactor supplier to the recommendations and suggestions included in the report of the 1998 mission, which reviewed the Primary Safety Analysis Report (PSAR) on 10 MW research reactor (ONRC reactor), and to review the impact of the response on the next revision of the PSAR. This review mission was implemented under the TC project (THA 4013).

The recommendations and suggestions of the 1998 mission report were generally given appropriate and adequate consideration by the Office of Atomic Energy for Peace (OAEP) and

reactor supplier. The mission provided only three key issues as recommendations and a number of suggestions to improve the quality and to facilitate further reviews of the PSAR.

### **II.3.4. Viet Nam**

#### *(i) Pre-IRRT Mission for VINATOM*

Date: 17-21 May 1999

Place: Hanoi, Viet Nam

Objective:

This mission was focused on the regulatory activities of the research reactor in Dalat and any future nuclear power plant option that may be chosen by Viet Nam. The main objective of the mission was to assist the Vietnamese regulatory body in its future developments when Viet Nam decide to embark on a nuclear programme. The task of the mission was to review Vietnamese regulatory body practices and to exchange information and experience with respect to the regulation of nuclear safety in the following specific areas: legislative and governmental responsibilities; authority, responsibilities and functions of the regulatory body; organization of the regulatory body; authorization process; review and assessment; inspection and enforcement; and development of regulations and guides.

Results:

Discussion were far ranging covering the existing arrangements and future plans to adopt nuclear option, the whole scope of legal and governmental infrastructure, and the creation of an effective regulatory body. The IRRT mission realized that Viet Nam has taken the necessary steps in establishing an independent regulatory body by separating the regulatory body and promotional functions. Nevertheless, much further work needs to be done. The following priorities have been identified by the IRRT members:

- In view of the present and future nuclear programme in Viet Nam, the Government should recognize the prime importance of a strong, competent and well resourced regulatory body; its adequate staffing is essential.
- An adequate legislative framework, both for the operation of the Dalat research reactor and for any future power reactors, should be established as soon as possible, preferably development of a new “Atomic Act” and a subsequent set of legal documents.
- A comprehensive training programme at a national level concentrating on nuclear safety issues, should be developed and implemented as soon as possible, to cope with present and expected future needs of qualified personnel, utilizing all available internal and external resources.

### **III. ACTIVITIES PLANNED IN 1999**

This section describes the activities planned for 1999 (October-December)

#### **III.1. REGIONAL ACTIVITIES**

##### **III.1.1. Training Workshop on the Safety of Research Reactors**

Date: 25 October-5 November, 1999

Place: Tokai-mura, Japan

Objective and contents:

The objective of this workshop is to provide training on the role and contents of the Safety Analysis Report for research reactors to participants who are involved in safety regulation. Twenty four participants from China, Indonesia, Malaysia, Philippines, Thailand and Vietnam will take part in the workshop. The workshop will consist of lectures, exercises and technical visits using the facilities of Japan's Atomic Energy Research Institute (JAERI).

##### **III.1.2. Training Workshop on NPP Siting**

Date: Postponed to 2000

Place: Jakarta, Indonesia

Objective and contents:

The objective of this workshop, which will be hosted by BATAN, is to provide an overall treatment of issues related to nuclear power plant siting. This covers mainly aspects related to natural and man-induced external hazards, dispersion of radioactive effluents in the atmosphere and the hydrosphere, emergency preparedness feasibility considerations including the demographic conditions. A site study visit will be included.

The workshop will be attended by approximately 20 participants from the countries participating in the EBP.

##### **III.1.3. Workshop on Nuclear Safety Information for Decision Makers**

Date: 29-30 November 1999

Place: Kuala Lumpur, Malaysia

Objective and contents:

Development of nuclear power is sometimes difficult for the public to accept as a result of lack of providing correct, adequate and timely information concerning nuclear safety. Especially providing information by Government officials is important during all phases of



nuclear facilities, from siting to operation. Government officials have to make effort to have a proactive, open and transparent attitude towards the public by providing information on all of the work carried out for ensuring nuclear safety. This activity will be hosted by Atomic Energy Licensing Board (AELB) of Malaysia.

The objective of the workshop is to provide decision makers with information and basic knowledge on nuclear safety, and to exchange experiences and identify issues in the field of nuclear safety communication with the public:

- what is nuclear safety;
- what are the Government's necessary commitments;
- what are the main issues in a specific country;
- how to implement public information and consultations;
- examples and experiences from other countries.

## III.2. NATIONAL ACTIVITIES

### III.2.1. China

#### *(i) Seminar on Living PSA and PSA Applications*

Date: 19-22 October 1999

Place: Beijing, China

Objective and contents:

The objective of this seminar is to discuss the current state of the art on application of results of Probabilistic Safety Assessment (PSA) to design, operation, and accident management of NPP. Participants will be professional staff members of the regulatory authorities, design and engineering consultants, NPP operators and utility organizations with previous knowledge in PSA.

#### *(ii) Experts' Mission on Emergency Action Levels of NPPs*

Date: Postponed to 2000

Place: Beijing, China

Objective and contents:

The objective of this experts' mission is to provide practical information on establishing or developing national and facility level emergency classification schemes for nuclear accidents; to provide practical information on the development and use of emergency entry conditions and emergency action levels in the schemes; and to develop and agree upon follow-up actions.

*(iii) Experts' Mission to Review Selected Design Safety Aspects of the Lianyungang NPP*

Date: 15-30 November 1999

Place: Beijing, China

Objective and contents:

The objective of this experts' mission is to review the solutions adopted in the AES-91 design to address the safety issues previously identified for the WWER-1000/320 NPPs. The review will focus on selected aspects raised during the evaluations carried out by the Chinese specialists, and will consider the current international practice for advanced reactors of evolutionary design.

The experts' mission to review selected design safety aspects will be considered in two phases:

- The first phase covers three experts' groups which will peer review, in parallel, the design safety topics related to safety systems, components integrity and containment. It will be conducted from 15 to 19 November 1999.
- The second phase is to peer review design safety topics related to the fuel from 22 to 26 November 1999.

*(iv) Experts' Mission to Review the Lianyungang PSA*

Date: 22-30 November 1999

Place: Beijing, China

Objective and contents:

The objective of this experts' mission is to carry out a review of the preliminary Lianyungang Level 1 PSA for internal initiating events, with the purpose of assessing the adequacy of the treatment of important technological and methodological issues in the study. The experts will assess the results of any reviews of the Lianyungang PSA made by Chinese PSA experts, and will consider insights from PSAs for other advanced reactors of evolutionary designs.

The review will be performed according to the guidance provided in the IAEA TECDOC-832 "IPERS Guidelines for the International Peer Review Service" (second edition, 1995).

*(v) Review Mission on Specific Design Considerations for the CEFR and Follow-up Mission*

Date: 29 November-9 December 1999

Place: Beijing, China

Objective and contents:

According to the request from NNSA, the following review items are included in the review mission for China's Experimental Fast Reactor (CEFR) to support NNSA's safety assessment:

Reactor shut down systems, siphon devices in sodium purification system, reactor vessel integrity, monitoring system for fuel failure and other seismic considerations. The mission will be composed of experts from Japan, France, UK and Germany. The national experiences will be introduced to NNSA.

A follow-up mission to the previous IAEA review mission carried out in November 1998 will be implemented.

### **III.2.2. Indonesia**

*(i) Experts' Mission on Improving SAR of Serpong MPRR in Indonesia*

Date: 29 November-3 December 1999

Place: Serpong, Indonesia

Objective and contents:

The main purpose of this experts' mission is to provide advice and assistance on how to improve the safety analysis report, through exchange of first-hand experience and knowledge between the faculties of BATAN and 30MW MPRR centre at Serpong in Indonesia, as a follow-up activities of INSARR mission carried out in 1998.

The experts' mission will review several areas related to improvement of the safety analysis report such as safety analysis, technical specification and other recommendations derived from the INSARR mission carried out in 1998. The mission team will be composed of four experts (2 Agency staff and 2 external experts).

*(ii) Experts' Mission to Review Emergency Preparedness with Respect to International Experience*

Date: 6-10 December 1999

Place: Jakarta, Indonesia

Objective and contents:

The objective of this mission is to provide an independent assessment of the preparedness to respond to nuclear/radiological emergencies, to identify areas which should be improved to meet international standards, and to provide advice on ways improvements might be achieved.

### **III.2.3. Malaysia**

*(i) Experts' Mission to Review Organization of AELB*

Date: 8-12 November 1999

Place: Kuala Lumpur, Malaysia

Objective:

The objective of this experts' mission is to review Malaysia's regulatory body practices, and exchange information and experience with respect to the regulation of nuclear safety in the following specific areas: legislative and governmental responsibilities; authority, responsibilities and functions of the regulatory body; organization of the regulatory body; authorization process; review and assessment; inspection and enforcement; and development of regulations and guides.

### **III.2.4. Philippines**

No new activities are planned.

### **III.2.5. Thailand**

*(i) National Seminar on Regulatory Function*

Date: 22-26 November 1999

Place: Bangkok, Thailand

Objective and contents:

The objective of this seminar is to present international experiences in matters related to the establishment and functions of a nuclear regulatory body.

The contents of the seminar will include topics such as:

- Organization and staffing of the regulatory body;
- Licensing process and assessment;
- Inspection and enforcement;
- Development of regulations and guides;
- Safety culture;
- Emergency preparedness;

- Practical examples of establishment and development of regulatory bodies in other countries; and
- Research reactor specific safety issues.

### III.2.6. Vietnam

No further activities are planned in 1999.

## IV. CONTRIBUTIONS 1999

The following countries have provided cash and/or in-kind contributions.

<b>Donor</b>	<b>Contributions (US\$)</b>
Canada	6,700
Japan	1,444,000 <sup>(*)</sup>
Spain	70,000
USA	233,000 <sup>(**)</sup>
<b>TOTAL</b>	<b>1,753,700</b>
France	1 cost-free expert
Germany	1 cost-free expert

\* includes 2 cost-free experts from Japan.

\*\* includes US\$ 98,000 carry-over from the 1998 contribution.