

**The IAEA Extrabudgetary Programme on the Safety of Nuclear Installations  
in the  
South East Asia, Pacific and Far East Countries**

**PROGRAMME SCOPE FOR 1999-2000**

**1. INTRODUCTION**

The first meeting of the Advisory Group for the Extrabudgetary Program on the Safety of Nuclear Installations in the South East Asia, Pacific and Far East Countries (EBP) will be held at the IAEA headquarters in Vienna, Austria on October 5-6, 1998.

This document is intended to describe the overall purpose and objective of the EBP, its historical development and activities completed to date. It also provides a description of the activities proposed to be conducted within the framework of the EBP in 1999-2000, and the projected resource needs.

It is expected that the Advisory Group will review this document and provide the IAEA with advice on the proposed 1999-2000 activities, and the extrabudgetary contributions needed to implement the programme.

**2. PURPOSE AND OBJECTIVE OF THE EBP**

At the Moscow Nuclear Safety and Security Summit held in April 1996, a fundamental commitment to give an absolute priority to safety in the use of nuclear power was affirmed by the Heads of State assembled. It was reaffirmed and reinforced during the Tokyo Conference on Nuclear Safety held in November 1996 and the Seoul Conference on Nuclear Safety held in October 1997, and it is a cornerstone of the Convention on Nuclear Safety which recently became effective. It embodies the truth that "a nuclear accident anywhere is a nuclear accident everywhere," that support for nuclear power everywhere would be seriously eroded by another nuclear accident anywhere. The rapidly approaching 20th anniversary of the accident at Three Mile Island and the recently marked 10th anniversary of the Chernobyl disaster are clear and persistent reminders of the need for "safety first."

Within the participating countries of the region, reliance on nuclear power varies widely. Some countries have well established nuclear power programs, some have simply announced their intention to develop and utilise nuclear power while others are significantly expanding their current programs. For example, China has a small number of nuclear power plants currently operating and has several new nuclear power plants under construction with many more planned. The construction of nuclear power plants to meet the expected growth in the demand for electricity is being considered in Indonesia, Malaysia, Philippines, Thailand and Vietnam.

All the participating countries in the region are firmly committed to, and supportive of, the "safety first" principal. However, they recognise that they are all at very different stages in their development and utilisation of nuclear energy, and therefore their needs vary

substantially. They also recognise that effective and efficient preparation for nuclear power generation is necessary in the medium and long term and that this should be on the experience and knowledge with the operation of their research reactors. They have agreed on the need to establish closer co-operation on nuclear safety-related matters utilising the experience accumulated within the region and in the rest of the world, to maintain an active exchange of information on nuclear safety matters and to jointly assess the progress made. They are also interested in harmonising nuclear safety-related activities, reflecting international development and cultural factors in the region.

In meeting these objectives, they have asked the IAEA for assistance. In response to this request, the IAEA has developed and established an EBP on the Safety of Nuclear Installations in the South East Asia, Pacific and Far East Countries. Its fundamental purpose and objective is to strengthen nuclear safety in participating countries in the region and in particular to enhance the technical capabilities of regulatory authorities and supporting technical organisations. This will also establish a consistent approach to nuclear safety, reflecting international developments and cultural factors in the region.

### **3. BACKGROUND**

At the request of its Member States, the IAEA organised a consultative meeting in July 1997 to identify and discuss potential nuclear safety-related co-operation and assistance needs for Member States in South East Asia, Pacific and the Far East. Representatives from Australia, Czech Republic, China, France, Indonesia, Japan, Spain, Malaysia, Philippines, Thailand and Vietnam participated in this meeting. The participants welcomed the IAEA's efforts and encouraged the IAEA to launch a new EBP to strengthen nuclear safety in the South East Asia, Pacific and Far East Countries. They urged the IAEA to continue to identify possible areas of co-operation and assistance.

The IAEA presented a conceptual outline and program plan for the new EBP at a kick-off meeting held on October 20-21, 1997. Representatives from Australia, Austria, China, France, Indonesia, Japan, Republic of Korea, Malaysia, Slovak, Spain, Thailand, the United States and Vietnam participated in this meeting. The meeting participants agreed that the scope of the new EBP should include such areas as:

- training in nuclear safety;
- strengthening national regulatory framework and technical and management capabilities (in relation to both nuclear power plants and research reactors) including: nuclear legislation, regulations, safety assessment, licensing, inspection and enforcement;
- emergency planning and preparedness;
- safe storage of research reactor spent fuel;
- promotion of safety culture concepts;
- preparation of information to decision makers and to the public to build up understanding and confidence in nuclear safety;

- development and revision of country profiles and specific action plans for prioritizing IAEA assistance in nuclear safety matters related to NPPs and research reactors;
- establishing a regional forum to exchange information to harmonize the implementation of nuclear safety concepts.

The meeting participants also agreed that the initial implementation of the EBP should be divided into two phases.

The first phase (1997-1998) should include development of country-specific nuclear safety profiles, consistent with the IAEA's recently developed and adopted "Integrated Strategy for Assisting Member States in Establishing/Strengthening Their Nuclear Safety" (Advisory Group Meeting Report, 5-8 December, 1996). The first phase was also to include the provision of assistance at both the regional and national levels, with regional assistance focusing on areas of common interest and specific national assistance focusing on identified high-priority safety needs. The IAEA's safety services would be made available during the first phase, in a manner consistent with the "Integrated Strategy."

The second phase (1999-2000) should include continuation of assistance at both the regional and national levels on the basis of the needs identified in the country-specific nuclear safety profiles developed in the first phase.

The meeting participants also agreed that an Advisory Group be established and convened, involving all countries participating in the framework of the EBP. The terms of reference of the Advisory Group were developed and adopted (see Annex 1).

To date, Japan, Spain and the USA have committed their contributions both in cash and in kind. France, Germany and the Republic of Korea have committed their contributions in kind. Other countries have expressed their interest and may commit resources in the future.

#### **4. ACTIVITIES IN 1997-1998**

As agreed to during the October 1997 kick-off meeting, Phase I activities have focused on three principal areas, development of country-specific nuclear safety profiles, provision of regional assistance in areas of common interest and provision of specific national assistance in areas identified as high-priority safety needs.

##### **4.1. TECHNICAL VISIT AND DEVELOPMENT OF NUCLEAR SAFETY COUNTRY PROFILE AND ACTION PLAN**

The IAEA staff carried out technical visits to China, Indonesia, Malaysia, Thailand, Philippines and Viet Nam. On the basis of the Integrated Strategy, each participating country in the region has designated a Nuclear Safety country officer and the IAEA has designated country officers (IAEA staff) for each participating country in the region. Individual Country Nuclear Safety Profiles (CNSP) and action plans for each participating country in the region have been prepared jointly by the participating country in the region and the IAEA staff. Some activities listed in the action plan with high priority are being implemented (refer to CNSP of

each country).

## 4.2. REGIONAL ACTIVITIES

As agreed at the Kick-Off Meeting, a two-week Regional Training Workshop on nuclear safety (Phase I) was implemented in March 1998 at Guangdong NPP, China. This workshop was designed to provide a comprehensive overview of the basic concepts underlying the principles of the regulation, management of safety, and operation of nuclear installations. Thirty experts from China, Indonesia, Malaysia, Philippines, Thailand and Viet Nam participated in the workshop.

A second Regional Training Workshop on nuclear safety is scheduled for October 1998 in Taejon, Korea. This workshop is designed as an advanced step of Phase I to discuss the principles of nuclear safety, implementation of defence in depth, and verification and improvement of defence in depth.

In these activities, experience and information on the safety of nuclear installations were exchanged among participating countries and donor countries.

## 4.3. SPECIFIC NATIONAL ACTIVITIES

China has requested specific assistance complementary to the ongoing assistance, which was approved during the Kick-Off Meeting. Some activities have already been implemented such as the workshop on safety-related seismic issues of the Lianyungang site and on the requirements for performing a Level 1 PSA of the Lianyungang NPP in March, a seminar on safety culture and the assessment method in October, and an expert mission on the compatibility of safety-related components supplied from different countries for Qinshan phase II. In addition, a safety review mission for the Fast Experimental Reactor is scheduled for November 1998.

During the technical visits to the five countries, some requests for assistance were assigned high priorities by these countries. For this reason, an INSARR mission was conducted in Indonesia to meet the country's needs with maximum efficiency and effectiveness.

Several experts from countries with advanced nuclear power programme have participated in these activities.

# 5. SCOPE OF IAEA ACTIVITIES FOR 1999-2000

## 5.1. STRATEGY FOR ACTIVITIES

### 5.1.1. Overview

The overall proposed program direction and scope for Phase II activities continues to be that which was agreed to at the October 1997 Kick-off meeting.

Participating countries are currently developing their nuclear safety-related

infrastructure on the basis of the management and operation of research reactors. This phase is of utmost importance as it will be the foundation for the development of a nuclear power programme. Therefore, it is absolutely essential to improve the safety of the existing research reactors.

Safety oversight by a strong, independent and technically competent regulatory authority is a fundamental component of nuclear safety. Such an organisation should be developed prior to or at least in the early stages of the utilisation of nuclear energy in a country. Consequently, parallel to supporting the safety of existing research reactors, the EBP should place a high priority on assisting the national authorities to develop and strengthen their regulatory organisations.

There are also assistance requirements related to radiation protection and although some of these assistance requirements may not be entirely covered with the scope of the EBP, they should be compiled to ensure co-ordination of the assistance activities and to avoid gaps and overlaps.

#### 5.1.2. Activities with high priority

Among the many safety services provided by the IAEA, International Regulatory Review Team (IRRT) missions and Integrated Safety Assessment of Research Reactors (INSARR) missions are considered as priority EBP activities. The scope of these services is described in Annex 2. For countries which have accepted IRRT and INSARR missions in the last few years, results and recommendations of these missions will be taken into consideration in the action plan. For these countries, additional IRRT and INSARR missions for the same research reactors would basically be not necessary in the programme cycle 1999-2000.

With respect to China and considering its projected nuclear power development programme, the EBP should focus on the assistance to peer review specific safety topics related to the Safety Analysis Reports for new nuclear power plants and research reactors, and on the assistance to enhance the safety of existing nuclear power plants. Even though the last IRRT mission to China was conducted in the year 1994, an additional follow-up mission to China is necessary in view of the current reorganisation of the regulatory authority.

#### 5.1.3. Activities based on common and/or specific needs

Assistance to the participating countries in the region should be addressed through the existing IAEA services such as workshops, seminars and expert missions organised to meet their specific needs. The assistance activities can be categorised into two groups, namely: regional and national.

Assistance to the common needs of the participating countries in the region should be implemented as regional activities to optimize assistance and to provide an opportunity for exchanging information of common interest. For this purpose, regional activities on some specific issues including training workshops, seminars, and training courses will be implemented. Both existing IAEA safety services and tailored assistance can be implemented as national activities by an expert mission, a workshop and/or a seminar for this specific purpose. Some of the donor countries have offered to provide training for the participating countries in the region (e.g. for the safety of research reactors).

#### 5.1.4. Database and information release

The IAEA will establish a database that includes up-to-date information on all the assistance activities in the countries of the region, including activities implemented under bilateral and national programs to the extent known to the IAEA. This database will be used by the IAEA to determine the gaps between the existing situation and the assistance planned, and to avoid duplication of assistance implemented under bilateral co-operation and within national programmes. This data base should be created on a country by country basis and should be made available to all the countries involved in the EBP.

#### 5.1.5. Co-ordination

The IAEA has ongoing TC regional activities such as the “Improvement of Legal Framework on the Applications of Peaceful uses of Nuclear Energy and Radioactive Nuclear Material” and other country specific TC projects. The IAEA is also involved in the Regional Co-operative Agreement for research, development and training related to nuclear science and technology for Asia and the Pacific (RCA). In order to avoid gaps and duplication, the TC and RCA activities are listed in each CNSP and the action plan is drafted subsequent to the listing of these activities. In addition, bilateral assistance should be considered to develop action plans.

An Advisory Group has been already established, based on the agreement of the Kick-off meeting, in order to advise the IAEA on the major activities, to evaluate the results and progress made in the implementation of the programme activities, and to advise on future activities based on the achievements. The meetings of Advisory Group will be held annually in Vienna.

In order to co-ordinate the related activities, the Special Projects Unit of the IAEA Division of Nuclear Installation Safety (NSNI) will take the initiative to hold a periodical meeting with the country officers in TC and NSNI, and the Divisions related. In case of major programme changes, the Agency will inform the members of the Advisory Group.

## 5.2. RESOURCES FOR EBP

All the activities based on the above action plan should be implemented by extrabudgetary contributions either in cash or in kind. There is support from TC projects, but no support from the regular budget.

Phase I activities have been funded through a combination of both in kind and cash contributions. This has included the provision of two cost-free experts to work in Vienna together with the IAEA staff (one from Germany and one from France) and cash contributions from Japan (\$1,885,000), Spain (1 million P), and US (\$200,000).

The estimated annual extrabudgetary financing required to implement the proposed activities is US\$ 1.32 Million per year for 1999 and 2000 respectively. 47% of these project cost are required to finance the temporary staff expenses without which the project cannot be implemented. This estimate has been already included in the document Gov/1998/1 as the H.1.06 project.