International Conference on Illicit Nuclear Trafficking

19 – 22 November 2007, Edinburgh

Considerable concern over the illicit trafficking of nuclear material began in the early 1990s following a number of incidents involving the seizure of highly enriched uranium. After 11 September 2001, there has been a growing government and public concern that nuclear and other radioactive material may fall into the hands of terrorists or criminals who could use it for malicious purposes.

The IAEA through the Nuclear Security Plan for 2006–2009 (Plan) established an overarching goal to contribute to strengthened nuclear security worldwide and a wide range of bilateral and multilateral initiatives aim at preventing the illegal movement of radioactive material that could be used by non-State actors for malicious purposes. In concert with those actions, the international community has taken important steps to strengthen the platform of international instruments of relevance for nuclear security. These instruments contain obligations of direct relevance for combating illicit nuclear trafficking.

With this in mind, the IAEA felt it was timely to convene the first international conference to specifically address illicit trafficking of nuclear and radioactive material. The principal aim of the conference was to examine the threat and context of illicit nuclear trafficking of radioactive material, specifically, what is being done to combat such trafficking and where more needs to be done. The conference was also to consider how the obligations and commitments of the legally binding and non-binding international instruments could be and are being implemented by various States.

The Conference, which was held in Edinburgh in November 2007, was organized by the IAEA and hosted

by the Government of the United Kingdom in cooperation with Interpol, Europol and the World Customs Organization (WCO). Attendance by approximately 300 participants from some 60 States and 11 international organizations was testimony to the widespread recognition of the importance of the issue. 80 oral presentations were given in 8 sessions. These oral presentations were supplemented by 20 posters and the exhibition of state-of-the art equipment by 15 commercial exhibitors.

The conference concluded that illicit nuclear trafficking remains an international concern, with potential for serious consequences for human life, health, property and the environment, efforts must continue to establish effective systems, technical and administrative, to control movement of nuclear and other radioactive materials, and to prevent and detect their uncontrolled and unauthorized movement. The Conference also acknowledged the important achievements of the IAEA Nuclear Security programme and encourages the IAEA to continue to play a central role in the global efforts to combat illicit nuclear trafficking

Safety Requirements: Safety of Nuclear Fuel Cycle Facilities

In September 2007 the IAEA Board of Governors established as an IAEA safety standard and approved for publication a Safety Requirements publication on Safety of Nuclear Fuel Cycle Facilities. This publication establishes requirements that must be satisfied to ensure safety at all stages in the lifetime of a nuclear fuel cycle facility (i.e. its siting, design, construction, commissioning, operation and decommissioning).

In nuclear fuel cycle facilities, nuclear material and radioactive material are used, stored and disposed of, in quantities or concentrations that pose potential hazards to workers, the public and the environment. This publication covers only facilities for processing, refining, conversion, enrichment and fabrication of fuel (including mixed oxide fuel), spent fuel storage, reprocessing and associated waste conditioning and storage, and research and development. Reactors, mining facilities and waste disposal facilities are not considered here.

Fuel cycle facilities employ many diverse technologies and processes. Radioactive material is often processed through a series of interconnected units and consequently can be found throughout the entire facility. Operations at large fuel cycle facilities generally require more operator intervention than at nuclear power plants or research reactors. This may result in specific hazards to the work force. In addition, the nature and diversity of the processes associated with the facilities result in a broad range of hazardous conditions and possible events that need to be considered in the safety analysis.

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http://www.iaea.org/OurWork/ST/NS

INSAG Message on Nuclear Safety Infrastructure

The International Nuclear Safety Group (INSAG) provides recommendations and opinions on current and emerging safety issues to the IAEA and others. One of the vehicles used by INSAG to fulfil this responsibility is a letter[1] that it sends annually to the IAEA Director General. In its 2007 letter, INSAG Chairman Richard Meserve addressed nuclear safety in the current context and various issues that warrant special attention.

Regarding the importance of nuclear safety to new entrants, it is mentioned that “Many countries with no past experience with nuclear power have recently expressed interest in building nuclear power plants. Even if a foreign vendor is responsible for the design, construction, and commissioning of a plant, the recipient country has the obligation to ensure the existence of a strong infrastructure that can guarantee continuing attention to safety for a period as long as a century or more. In short, there are wide responsibilities that arise from a commitment to nuclear power and the new entrants must take appropriate and timely actions to fulfil those responsibilities.”

The letter further states: “We also urge each new entrant to seek at an early stage to become actively involved in the global nuclear safety regime – the web of relationships that support the achievement of safety. This regime is described in a recent INSAG report entitled *Strengthening the Global Nuclear Safety Regime* (INSAG-21. In light of the substantial challenge that establishing the necessary infrastructure will present to a new entrant, we conclude that the IAEA should provide such countries with enhanced assistance. … Indeed, it is in the self-interest of the entire nuclear community to help the new entrants to understand and fulfil their obligations.”

INGAG notes that “Along with stronger efforts to rebuild the cadre of skilled personnel, there is a need to

INSAG at the Kori power plant construction site in the Republic of Korea

ensure that existing capabilities are deployed efficiently. Safety is ultimately dependent on the attention and capabilities of skilled people and the shortfall in capable staff could have grievous effects”.

Regarding new construction, “One aspect of the internationalization of the nuclear business, is the immediate reality that the supply of nuclear parts and components may come from many places on the globe. As a result, no one regulator can readily have scrutiny over the quality of all those parts and components. As a result, there is a need for careful coordination by regulators around the globe to ensure that there is consistency in the standards applied by different countries and that those standards are satisfied.”

INSAG is currently working on a document addressing nuclear safety infrastructure for a national nuclear energy programme based on the IAEA fundamental safety principles.

[1] http://www-ns.iaea.org/downloads/committees/insag/2007AssessmentLetterFinalelbaradie.pdf

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The Asian Nuclear Safety Network (ANSN)

Objectives of the ANSN

The primary objective of the ANSN is to pool, analyse and share existing and new nuclear safety knowledge and practical experience among Asian countries. It operates as a platform for facilitating sustainable regional cooperation among the scientific communities of those countries. The combination of knowledge networks and human networks contributes to enhancement of nuclear safety infrastructures in the participating countries, and to continuous enhancement of regional cooperation and the safety of nuclear installations in the region.

The current participating countries are China, Indonesia, Japan, Republic of Korea, Malaysia, the Philippines, Thailand and Vietnam. Australia, France, Germany and the USA are ANSN supporting countries. Pakistan and Bangladesh are associated countries in activities related to the safety of nuclear power plants and/or strengthening their regulatory frameworks.

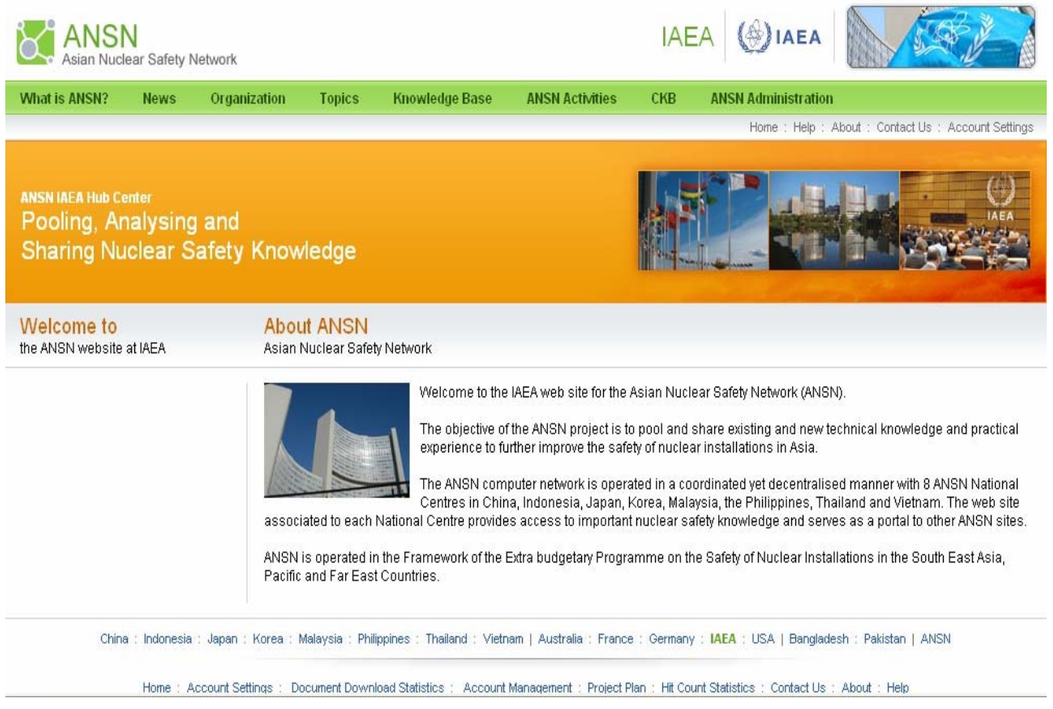
Structure of the Network

The ANSN is a decentralized autonomous network system composed of three hubs in China, Japan and Republic of Korea, five national centres (NCs) in Indonesia, Malaysia, the Philippines, Thailand and Vietnam, the IAEA's ANSN web site and other web sites of the supporting countries. Hubs and NCs have their own databases and are interconnected via the internet. A general web site, www.ansn.org, under development, is open to the public. It provides overall information and serves as a portal for the various web sites.

The hubs in China, Japan and Republic of Korea and the IAEA ANSN web site play a core role in providing the knowledge for the entire ANSN as well as implementing related IAEA safety activities. The NCs are mostly intended to serve and promote knowledge sharing among the national experts and to facilitate access to the information and knowledge contained in the ANSN. NCs also provide technical reports and other specific safety information, in the national language. The hubs and NCs are independently operated by designated organizations in the participating countries, but in line with the overall ANSN implementation policies. Some ANSN documents are catalogued in a master index using a taxonomy which is a tool for users to locate and retrieve information.

The master index is currently hosted and maintained by the IAEA, but may be relocated to any other hub or NC in the future. A system for exchanging the data among the distributed databases using XML (eXtensible Markup Language) procedure is provided to automatically update the master index.

Access to the ANSN knowledge base is restricted to authorized persons in the participating and supporting countries. To simplify users' access, the ANSN uses a single sign-on procedure that allows authorized users to access other hubs and NCs without being requested to sign in again once they log on to any of the centres.



Management and operation of the ANSN

The ANSN Steering Committee composed of the representatives from the participating and supporting countries and the IAEA, is in charge of overall coordination for developing and implementing the ANSN. The Committee has a major role in ensuring efficient and effective planning and implementation of the ANSN activities and its sustainable operation.

Several technical groups called Topical Groups are working in specific thematic areas as forums to share experience and to create new knowledge. Each topical group is composed of specialists working in the specific technical area dealt by the group. Online and offline meetings are organized by the groups for selecting documents to be shared, finding workable solutions to emerging issues and exchanging experience in the respective areas. Six Topical Groups are currently active, namely: Education & Training, Operational Safety, Safety Analysis, Emergency Preparedness & Response, Radioactive Waste Management and Safety Management of Research Reactors.

In addition, an Information Technology (IT) Support Group provides IT support to the ANSN and develops technical solutions to meet users' requirements.

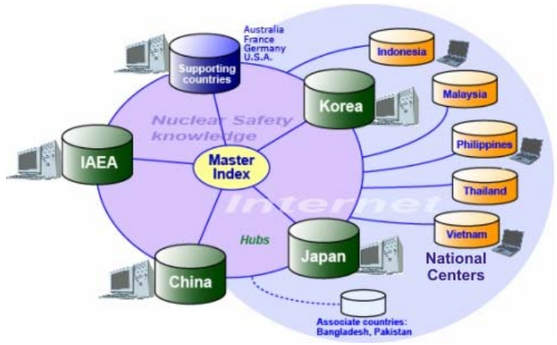
Promotion of the ANSN

In order to increase the outreach of the ANSN, a newsletter is published on a bi-weekly basis since March 2005 and distributed electronically to more than 800 subscribers. The newsletter provides an overview of recent technical activities carried out and those planned. It can also be accessed via the ANSN public web site.

To promote the use of the ANSN among the participating countries, several promotional meetings — known as 'caravans' — have been held during the past two years in various countries to introduce the ANSN and also to demonstrate the practical utilization of the network. These meetings were very much welcomed and some countries decided to organise additional caravan meetings to further promote the use of the ANSN at national level. The ANSN was also presented at major international conferences including the 15th Pacific Basin Nuclear Conference in October 2006 in Sydney and the International Conference on Knowledge Management in Nuclear Facilities in June 2007 in Vienna and has been displayed at the IAEA General Conferences.

Towards the Future

Since its inception in 2002, the ANSN has matured to become a regional mechanism for sharing nuclear safety knowledge amongst countries in the Asian region. To date, it has focused primarily on technical issues associated with nuclear safety. However, in recognition of the rising interest in nuclear power in the region, it would be timely to use the ANSN as a forum for discussion of broader strategy issues that are essential for a nuclear safety infrastructure. This would help to facilitate a common understanding of current and emerging nuclear safety issues and the formulation of strategies to address them.



The IAEA is also exploring ways to encourage greater utilization of the ANSN in support of capacity building, emergency preparedness and response, to bring better synergy with other regional organizations, and to promote participation of Member States in international safety conventions and codes of conduct. In this framework the IAEA has initiated contacts with the Nuclear Energy Safety Sub-Sector Network that is being established by the Association of Southeast Asian Nations (ASEAN) countries.

A Short History of the ANSN

In 1997, the IAEA's Extra Budgetary Programme on the Safety of Nuclear Installations in South East Asia Pacific and Far East Countries (EBP-Asia) started.

After 5-years' experience of the EBP-Asia, the programme focus shifted more to the encouragement of self-reliant and autonomous efforts by the member countries.

In 2002, the ANSN project was initiated to encourage sustainable and autonomous safety activities in the region.

In 2003, a pilot project was conducted with 4 web sites focusing on education and training to confirm the feasibility of the network.

In 2004, the ANSN entered into its operational phase. The ANSN Steering Committee and three Topical Groups were established.

In 2005, ANSN web sites and databases became operational in 9 countries. The first issue of the biweekly ANSN newsletter was published.

In 2006, advanced information technologies were incorporated for improving usability.

In 2007, the Integrated Safety Evaluation (ISE) process for EBP-Asia was fully integrated into the ANSN.