MOSTI
Ministry of Science, Technology and Innovation Malaysia

NUCLEAR REGULATORY Newsletter

AELB ATOMIC ENERGY LICENSING BOARD

Fukushima Nuclear Disaster – Managing Public Concern

The Minister of Science, Technology and Innovation, YB Datuk Maximus Johnity Ongkili, and his Ministry's delegation with AELB officers during the Fukushima incident Press Conference.

The enormous 9.0 magnitude earthquake and tsunami that hit Japan on March 11, 2011 led to the Fukushima Daiichi nuclear disaster. It is a series of equipment failures, nuclear meltdowns and releases of radioactive materials at the Fukushima Nuclear Power Plant.

The Fukushima crisis has heightened public concern about radiation even though the effects so far have been mostly local. In order to overcome the general fear arising from the incident in Japan, Atomic Energy Licensing Board (AELB) Department activated its National Radiological Emergency Response Centre to operate 24 hours daily so as to continuously monitor the situation in Japan as well as its impact to Malaysia. The Centre plays an important role in communicating with the public and handling technical queries, issues and problems in relation to this incident. At the same time, this Centre also coordinates the mitigation actions to be taken in ensuring that the impact of the incident in Fukushima does not cause unnecessary radiological risk to Malaysia.

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What the public fear the most is the possibility of radioactive release from the Fukushima incident reaching Malaysia. We will know if the radioactive emissions spread to Malaysia because AELB Department is continuously monitoring the environmental radiation levels through the Radiological Environmental Monitoring System (ERMS) which is located in six locations throughout Malaysia i.e. Chuping (Perlis), Ipoh (Perak), Kuantan (Pahang), Senai (Johor), Kudat (Sabah) and Sri Aman (Sarawak). Current radiation levels can be obtained from AELB website (www.aelb.gov.my).

In addition, airports which are open to international flights especially flights from Japan such as Kuala Lumpur International Airport, as well as Low Cost Carrier Terminal and airports in Penang and Kota Kinabalu are also being monitored by AELB Department. During the first three months right after the incident, passengers, baggage and cargoes arriving from Japan were scanned using radiation detection device monitored by AELB Department. In addition, AELB Department also stationed its officers at these airports to conduct secondary screening using portable equipment. Joining the AELB officers were officers from Malaysia Nuclear Agency who were stationed at the airport with the purpose of ensuring that prompt action could be taken if any contamination was detected. Actions would include quarantin and application of decontamination procedures. In cooperation with Malaysia Airports Berhad, a special room was prepared for decontamination should any passengers or their baggage were found to be contaminated. AELB Department and Malaysia Nuclear Agency also offered free contamination screening at their respective headquarters to individuals who arrived from Japan.

There are many lessons learnt from managing the situation related to the Fukushima Nuclear Disaster. Among them are:

- Information released by the official channel must be timely to ensure that the public will always be updated with the right information on the current situation in Japan.
- Adequate number of trained personnel must be available to handle public concern for the effects of radiation from Japan. There must also be adequate personnel to scan passengers and luggage at airports.
- Cooperation with various agencies such as Malaysia Nuclear Agency and the Ministry of Health has given a deeper understanding of the roles and functions of each agency in managing such disaster.
- There must be adequate number of equipment for monitoring environmental radiation levels to ensure national safety.

AELB officer (right) showing how to use a Survey Meter to detect whether an individual has been contaminated by radiation.

Official Visit by the Vice President of the Republic of Uganda

His Excellency Edward Ssekandi, the Vice President of the Republic of Uganda, visited three agencies of the Ministry of Science, Technology and Innovation (MOSTI), namely Atomic Energy Licensing Board (AELB) Department, Malaysian Remote Sensing Agency and Malaysia Nuclear Agency on June 21 and June 22, 2011. The official visit to the agencies was one of the programmes arranged for His Excellency Edward Ssekandi in conjunction with his participation in Langkawi International Dialogue 2011. The dialogue was used as a platform for both Malaysia and Uganda to voice their views and share experiences associated with business, economy and development. It was part of the efforts to continuously promote the already highly successful "Smart Partnership" to achieve cooperation among Governments and the multiple sectors contributing to socio-economic growth.

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The arrival of His Excellency Edward Ssekandi and his delegates to AELB was welcomed by the YB Datuk Haji Fadillah Yusof, Deputy Minister of Science, Technology and Innovation, Y. Bhg. Dato' Dr. Sharifah Zarah Syed Ahmad, Deputy Secretary General (Policy) and the top management of both agencies. The delegation of Uganda was also brought to the National Radiological Response Centre in AELB. His Excellency Edward Ssekandi expressed his appreciation on behalf of the Republic of Uganda for the successful arrangement of this programme and he looked forward to his country developing an agency similar to AELB.

Vice President of the Republic of Uganda, His Excellency Edward Ssekandi.

His Excellency Edward Ssekandi and his delegation with YB Datuk Haji Fadillah Yusof, Deputy Minister of Science, Technology and Innovation, YBhg. Dato' Dr. Sharifah Zarah Syed Ahmad, Deputy Secretary General (Policy) and the top management of both agencies.

Webinar on Critical Flow Modelling & Best Estimate Loss of Coolant Accident (BE LOCA)

A three-day online lecture (webinar) was held by the International Atomic Energy Agency (IAEA) in collaboration with the Korean Institute of Nuclear Safety (KINS) on July 19-21, at 2pm (Malaysian time). AELB and Malaysia Nuclear Agency as one of the Topical Group on Safety Analysis (SATG) members as well as other participants from Indonesia, Vietnam, The Philippines and Thailand participated in the webinar. It was held to provide participants with a platform to have more exercises and online discussion on Critical Flow Modelling & BE LOCA using webinar tool. The online lecture was delivered by the experts from the Korea Atomic Energy Research Institute (KAERI) and Korea Electric Power Corporation Nuclear Fuel (KEPCO NF).

Various presentations were made to provide participants with the relevant information on the use of the Visual System Analyzer (ViSA/RELAP) code and the basic theory of Critical Flow Model. Conceptual problems for Critical Flow Modelling with ViSA/RELAP were also demonstrated to deepen the understanding of VISA/RELAP usage. Loss of Coolant Accident (LOCA) is a mode of failure for a nuclear reactor. If not managed effectively, the effects of a LOCA could result in reactor core damage.

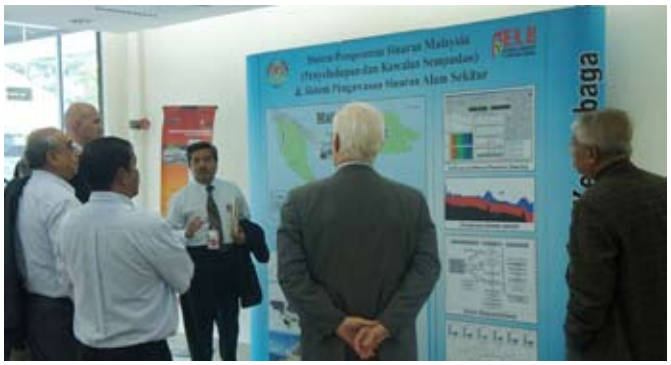
Participants from AELB during the webinar session.

Practical case for LOCA was carried out using VISA to give insights into plant behaviours after accidents. Implications for the design and safety analysis of nuclear power plants were also explained to the participants. On the last day, a wrap-up meeting and discussions on future topics for the second webinar scheduled for December 2011 were held.

AELB establishes cooperation with Malaysia Nuclear Power Corporation (MNPC) on Legal and Regulatory Study for Nuclear Power Plant

The legal development for research projects of nuclear power plant has been initiated by MNPC. The first meeting of this study was held from June 20 to 24, 2011 with Enconet as the appointed consultant which largely consists of those who had served as experts of International Atomic Energy Agency (IAEA).

Drafted legal documents (Acts, regulations, guidelines, standards, etc.) provided by AELB were submitted to the consultant for their members to strengthen the contents while they develop new legislation that fall within the scope of this study. It was important for all AELB divisions to be involved in this study, particularly those who were responsible for drafting the legal document in order to ensure that the documents would be in accordance with the requirements of nuclear regulatory.



Experts from Enconet and MNPC board members during their visit to AELB Headquarters.

Experts from Enconet, the appointed consultant.

YBhg. Prof. Dato' Dr. Noramly Muslim, Chairman of AELB during discussion on initial development for the research projects.

AELB Director General YM Raja Dato' Abdul Aziz Raja Adnan, Dr. Mohd Zamzam Jaafar, CEO of MNPC and consultants during the meeting.

Building Regulatory Competency in Probabilistic Nuclear Safety Analysis under the Norwegian IAEA Extra Budgetary Funded Programme

AELB will become a member of the Global Nuclear Safety Network (G-SAN) under this pilot programme.

Discussion on cooperation between AELB and IAEA Nuclear Installation Safety Division (NSNI) was held on January 6 and 7, 2011 to increase the knowledge and skills of AELB candidates undergoing the Building Regulatory Competency in Probabilistic Nuclear Safety Analysis project. This specifically focused on the assessment, analysis and verification of nuclear safety for nuclear power plants. This project was made possible through the Norwegian-funded Extra Budgetary Programme which was based on the IAEA Global Safety Assessment Network (GSAN). Under this pilot programme, AELB will become a member of the Global Nuclear Safety Network (G-SAN), to participate in knowledge and experience sharing activities interlinked with the Asian Nuclear Safety Network safety assessment activities. Both AELB and IAEA may seek each other's expertise to optimise the implementation of activities of common interest, including scientific visits, meetings and expert assignments.

This collaboration on safety assessment capacity building will enhance the IAEA's ability to provide better services to its Member States in the safety assessment area through the development of a model framework upon which the Agency can base subsequent advisory services and tailor training programmes to meet the needs of nuclear power newcomer countries.

New Board Directive and Guidelines on Nuclear Power Plant Siting in Malaysia

In preparation towards the use of nuclear energy, AELB, which is the only regulatory body for national atomic energy, must be ready to regulate activities by developing and strengthening the national nuclear legal system. One of the activities to be regulated by AELB is the placement of nuclear power plant site. For this purpose, three guidelines have been developed to meet the legal requirements of national and international levels. Documents that have been developed are Board Directive on Regulatory Requirements for Site Evaluation of Nuclear Power Plant, Guidelines for Site Selection of Nuclear Power Plant and Guidelines for Site Evaluation of Nuclear Power Plant. The legal documents were developed in collaboration with Government agencies/departments related to the placement of nuclear power plant, among others the Department of Environment, Malaysia Nuclear Agency, Ministry of Health, Energy Commission, Federal Department of Town and Country Planning, National Security Council, Department of Mineral and Geoscience and etc.

Regulatory requirements for site evaluation of nuclear power plant include safety aspects during site evaluation activities and safety criteria to be followed by applicants to ensure that the assessment process will comply with regulations enforced. Guidelines for Site Selection of Nuclear Power Plant were developed to provide guidance to the applicants of nuclear power plant site licence to carry out the selection of an appropriate site for the purpose of plant development to meet the legal criteria set by AELB. It covers aspects and the steps that need to be carried out for site selection criteria and information needed for legal evaluation and quality assurance system. Guidelines for Site Evaluation of Nuclear Power Plant were developed to help applicants to identify and meet the legal requirements in terms of safety assessment activities related to nuclear power plant site.

Board Directive on Regulatory Requirements for Site Evaluation of Nuclear Power Plant.

Guidelines for Site Evaluation of Nuclear Power Plant.

Guidelines for Site Selection of Nuclear Power Plant.

Recent & Upcoming Events

- **June 13 – 15, 2011, Penang**
  IAEA Lab Session Implementation of Additional Protocol in Malaysia
- **June 28-29, 2011, Malaysia Nuclear Agency**
  Inspection of Puspati Triga Mark 11 Research Reactor (RTP)
- **July 19 – 21, 2011, AELB Headquarters**
  IAEA Teleconference on Critical Flow Modelling & Best Estimate Lose of Coolant Accident (BE LOCA) Analysis
- **September 12 – 16, 2011, AELB Headquarters**
  Safety Assessment Capacity Building Activities under IAEA Norwegian-funded Extra Budgetary Programme
- **November 28 – December 2, 2011, Kuala Lumpur**
  Regional Workshop on National Regulatory System for Nuclear Safety, Security and Safeguards

AELB ATOMIC ENERGY LICENSING BOARD

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