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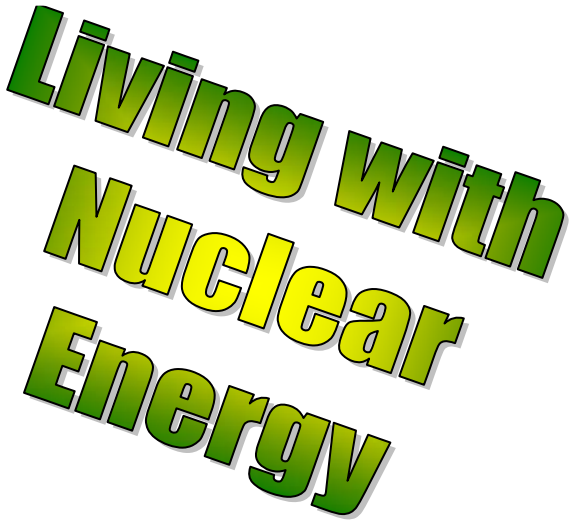
The use of nuclear energy has received mixed responses regarding its feasibilityas an alternative source of energy. Its potential as an economically viable and environmentally friendly source of energy, has often been marred by accidents worldwide pertaining to the lack of safety standards. Governments, especially those from developing countries lacking in capacity, are feeling the heat as doubts are raised about their capacity in adopting nuclear energy without threatening the lives of its citizens. This edition therefore takes a look at what has been done so far to improve the viability of nuclear energy and manage concerns about nuclear safety.

Measures to Improve Nuclear Energy's Feasibility

The International Atomic Energy Agency (IAEA) held its 51st General Conference at the Austria Center, Vienna from 17-21 September. More than 100 IAEA Member States and over 1,500 delegates attended the five-day event held. During the concluding session, delegates adopted resolutions aimed at strengthening the IAEA´s work in the areas of technology, safety and security, and safeguards.

The resolutions on the IAEA´s activities relating to nuclear science, technology and applications, touched on issues such as the development of innovative nuclear technology, nuclear power and non-power nuclear applications, the development and deployment of small and medium-sized nuclear reactors, and plans for desalination of sea water to produce potable water economically using small and medium-sized nuclear reactors.

In This Edition



With regards to the issue of nuclear, radiation and transport safety and waste management, the resolution adopted "urged the Secretariat to continue and strengthen, subject to available financial resources, its mandatory efforts... focusing particularly on mandatory activities and on technical areas and regions where the need for improvement is greatest".

The resolution on strengthening the effectiveness and improving the efficiency of the safeguards system called "on all Member States to give their full and continuing support to the Agency in order to ensure that the Agency is able to meet its safeguards responsibilities," urging all States which have yet to bring into force comprehensive safeguards agreements to do so as soon as possible. Safety and security are also key areas of cooperation. According to Mr. Philippe Jamet, Director, Nuclear Installation Safety, Department of Nuclear Safety and Security, "respecting safety and security is a non-negotiable element" when it

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comes to the IAEA´s work with its Member States.

On the issue of nuclear security and measures to protect against nuclear terrorism, the General Conference adopted a resolution which "calls upon all Member States to provide political, financial and technical support, including in-kind contributions, to improve nuclear and radiological security and prevent nuclear and radiological terrorism."

During the Conference, a new international initiative – aimed at bolstering cooperation between organizations involved in the decommissioning of nuclear installations – was also launched. Called the International Decommissioning Network (IDN), the initiative would act as a conduit for the flow of skills and information from those Member States with proven decommissioning expertise to those facing the challenge for the first time or whose programmes are constrained by lack of resources.

Around the world more than 350 nuclear installations - including research and medical as well as power reactors - are ageing and approaching the end of their operational life-span. Some have already been shut down and await the complicated and costly task of decommissioning, a process by which facilities are cleared of industrial and radioactive contamination so that they may safely be used for other purposes.

According to Paul Dinner from the IAEA´s Waste Technology Section, many of these facilities are small and widely distributed geographically. In most developing Member States, decommissioning strategies need to be tailored to cope with limited experience, infrastructure and funding.

The establishment of the IDN stemmed from the recommendations of a December 2006 IAEA International Conference in Athens, Greece, and builds on experience gained from the successful Network of Centres of Excellence for training and development in waste disposal technologies, formed in 2001. A collaborative initiative between the IAEA´s departments of Nuclear Energy, Nuclear Safety and Security, and Technical Cooperation, the IDN will be open to all Members States, and be of specific interest to those engaged in, or actively planning, decommissioning.

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Nuclear Energy Can Ensure Food Security

Joint efforts between the United Nation's Food and Agriculture Organization (FAO) and the IAEA, over the past 40 years, have been commendable. Speaking at the Scientific Forum, within the context of the IAEA´s 51st General Conference, Jacques Diouf, Director-General of the Food and Agriculture Organization (FAO), noted the joint FAO/IAEA programme, Nuclear Techniques in Food and Agriculture, as one of the best examples of inter-agency cooperation in the United Nations family.

Peaceful use of nuclear technology has been successfully applied to areas such as agriculture, crops, fighting disease, and soil and water management. The result worldwide has been millions of hectares of higher-yielding and disease resistant crops gained through radiation-induced mutations, the improvement of livestock and agricultural systems through the eradication of insect pests such as the screwworm, the tsetse fly and the fruit fly using sterile insect technique (SIT), and the use of isotopic techniques to enhance water use efficiency and crop productivity.

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Seeking Foreign Expertise on Nuclear Energy

As plans of developing nuclear facilities begin to take shape in Southeast Asia, ASEAN hopes to cooperate with Gulf Arabs states that have recently expressed their plans of pursuing civilian use of nuclear energy. Noting the Gulf Cooperation Council's (GCC) close relations with IAEA, ASEAN sees room to tap into the GCC's experience in nuclear energy management. The issue was discussed during a meeting of foreign ministers from ASEAN and the GCC on the sidelines of the United Nations General Assembly in New York.

Thai Foreign Ministry deputy spokesman Piriya Khempon noted that the GCC has had more experience in dealing with the International Atomic Energy Agency over the code of conduct to develop nuclear energy for peaceful purposes. The meeting, which was co-chaired by the Thai Foreign Minister Nitya Pibulsonggram and Saudi Foreign Minister Prince Saud Al-Faisal, agreed to strengthen co-operation over a wide range of sectors between the two regional groupings.

Secretariats of the two groups will plan to have more frequent contact, rather than every two years on the sidelines of the UN meeting. This would also give the two sides an opportunity to expand cooperation in other fields such as tourism, culture and investment. Prince Saud Al-Faisal invited more construction firms from Asean to invest in the GCC as there were plenty of project opportunities in the Gulf.

The cooperation between the GCC and ASEAN could also benefit the domestic affairs of many ASEAN members such as the Philippines, which have received assistance from Gulf states in the Organisation of Islamic Conference to secure peace talks with the Moro separatists.

Other Asian countries, such as Bangladesh have also sought foreign assistance in developing nuclear facilities. Talks with Russia have already begun and Moscow has expressed its willingness to cooperate. Its plans of setting up its first nuclear power plant at an estimated cost between

In Pakistan for instance, breeding salt-tolerant rice using nuclear applications, has helped the country to boost cultivation in arid, salty soils. In addition to enhancing agricultural production, the IAEA is supporting countries to improve health care, manage water resources and to monitor and protect the environment.

Such successful projects would without a doubt play a significant role in ensuring food and water security for developing nations worldwide. However, Mr Diouf noted that with less than ten years to go until the 2015 deadline for the Millennium Development Goals, the problems facing the world in the areas of food and agriculture remain enormous.

To date, an estimated 854 million people suffer from hunger worldwide. Moreover, about 70% of the world´s poor live in rural areas that are dependent on agriculture. But many agricultural production systems are fragile; some seriously deplete resources while others are vulnerable to the vagaries of weather and war. Water supplies to meet growing agricultural demands will be a major challenge in the future.

More food therefore needs to be grown and done so in a sustainable manner and in full respect of plant and animal biodiversity. According to Mr. Diouf, the Millennium Development Goals could still be reached, "but only if we redouble our efforts and focus them in locations and on actions where they can make a concrete and significant difference in a relatively short period of time."

There is also the risk, however, of the spread of diseases originating in animals, such as Avian Influenza. As huge amounts of foodstuffs are moved around the globe, a further challenge for the FAO will be maintaining and guaranteeing the safety of the foods we eat.

Hence, while the FAO and IAEA are committed in providing food security for millions worldwide, greater suppose and political will is needed from national governments to commit adequate funds to revitalize agriculture and rural sectors. At the same time, developed nations must fulfil their pledges to increase development assistance.

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1 and 1.5 billion dollars is aimed at countering electricity shortages which have taken a hard toll on the country.

According to Shafiqul Islam Bhuiyan, head of the Bangladesh Atomic Energy Commission, the government has in principle agreed to set up a 600-1,000 megawatt power plant in the northern district of Pabna. The plan for the plant in the Muslim-majority nation of 144 million people will be submitted to the International Atomic Energy Agency (IAEA) in October to seeking technical assistance and is hoped to be up and running by 2015.

Bangladesh's existing power plants depend on gas reserves and it is under pressure to find alternative sources of energy amid worries those reserves will be exhausted by 2015. It also faces massive electricity shortages, which have hit its booming textile industry. Bangladesh is capable of generating 3,000 megawatts at peak times, some 2,000 megawatts short of actual demand.

In 2006, violence over power cuts in a northern Bangladesh town left at least 20 people dead in clashes between police and farmers who had demanded increased electricity for irrigation. The World Bank has estimated that Bangladesh needs 10 billion dollars in investment to improve its power supply over the next decade.

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To build or not to build?

Dozens of Muslim clerics have issued an edict against the construction of Indonesia's first nuclear power plant on seismically charged Java island, saying the potential dangers far outweighed the benefits. The scholars from the country's largest Islamic organization, Nahdlatul Ulama (NU), acknowledged the plant, which is scheduled to be built in 2010 and up and running by 2016, would help meet the rising demand for electricity.

But they declared the project "haram" — or forbidden by Islam — over concerns about frequent earthquakes on the densely populated island and questions about the handling of radioactive waste. According to NU spokesman, Kholilurrohman, there is a need to avert danger and that the edict applies only to the plant on Java's northern tip, 280 miles east of the capital, Jakarta. Violating such an order is considered a sin.

Indonesia, the world's most populous Muslim nation with an estimated 200 million believers, hopes nuclear power will contribute a total of 4,000 megawatts to the country's electricity grid by 2025. The archipelagic nation is, however, prone to seismic upheaval due to its location on the so-called Pacific "Ring of Fire," an arc of volcanos and fault lines encircling the Pacific Basin.

Though nuclear plants can be built to withstand tremors, the public remains wary. Hundreds of protesters have taken to the streets in Java in recent months opposing the government's plans. Moreover, incidents such as the earthquake in Japan in July 2007, which resulted in fire and radioactive leakage in the country's Kashiwazaki-Kariwa nuclear plant, only serves to reinforces the vulnerability to earthquakes and the inevitability of human error.

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Acting director of the Institute for Essential Services Reform, Fabby Tumiwa, illustrates the potentially massive scale of a nuclear accident by noting that the ongoing Sidoarjo (East Java) mudflow incident is minuscule compared to a nuclear accident, which could cost trillions of rupiah to clean up.

The fierce reaction by civil society would also have implications on the government's credibility if it fails to deliver safe living environment for its people. Speaking after a regional conference on nuclear energy, Dr Rizal Sukma, deputy executive director of the Indonesia-based Centre for Strategic and International Studies (CSIS), noted the need to resolve the concerns of local communities that would be affected by the plant, in order to avoid instability in the region. Part of the solution would also be to further educate the public on the issue of nuclear energy and clarify misconceptions.

The implications of a nuclear accident also have the potential to affect the region. According to Prof Simon Tay, chairman of the Singapore Institute of International Affairs (SIIA), "safety issues in nuclear use are real issues and have influence in a wide range of contexts, such as the environment, climate change and regional security." It is therefore imperative for Indonesia to consider the transboundary threats and effects that its nuclear plans would have in Southeast Asia.

Construction is expected to start in 2010 and the plant is scheduled to be completed in 2016. Indonesia already operates three small nuclear reactors for scientific purposes. These are located in Bandung, West Java; Serpong, Banten; and Yogyakarta.

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