

## **Speech by NSA at the Manama Dialogue Plenary Session on Nuclear Power, Energy and Security**

12/12/2009

Mr. Chairman,

Distinguished participants,

It is indeed a pleasure to participate in the Manama Dialogue which has achieved a well deserved reputation as an International Conference of high standing. I commend the IISS, in particular, Dr. John Chipman, its Director General, for bringing together this extraordinary range of policy makers and experts for this Conference.

I propose to organize my remarks by focusing on the current trends in nuclear power globally, offer some thoughts, as seen from India's perspective, as to future trends and challenges, and nuclear security as also India's firm commitment to universal nuclear disarmament.

Mr. Chairman,

Over the past decade, there has been a major change in perception of nuclear power the world over. Today, the stage seems set for a major expansion in the use of nuclear power. This renewed and more widespread interest in nuclear power, accompanied by steady growth of the global industry, has been referred to as the global nuclear renaissance. Facts suggest that this phenomenon is here to stay.

There are 436 nuclear power plants currently in operation in the world, over 90% of them in OECD countries. Significantly, of the 53 new nuclear power reactors under construction, a large percentage is in non-OECD countries, particularly in Asia.

A significant trend is the interest in nuclear power in our region. In 2006, the GCC announced their interest in a joint nuclear development programme. Bahrain and the US signed an MoU in 2008. UAE has concluded MoUs with US and France. Egypt has said that its first reactor would be operational by 2017. Other countries which have expressed interest include Morocco, Yemen, Tunisia, Jordan and Algeria. There is a similar trend in South East Asia. Indonesia, Vietnam and Thailand all have announced plans for the construction of new nuclear power plants.

There is now greater realization of the value of nuclear power as a clean and sustainable energy source, essential to avoiding green house emission and to address the challenge of Climate Change. It is estimated that the complete nuclear power chain from mining to reactors and waste disposal emits only 3.24 grams of carbon dioxide per kilowatt hour, which compares well with wind and hydro power, and much less than fossil fuels. In the larger energy source basket, nuclear power is thus an increasingly important component. For a number of countries, nuclear power is seen as the energy co-efficient of the future.

Mr. Chairman,

Energy is vital to fuel the engine of India's economic growth which has averaged 7 to 9% during the last decade.

It is anticipated that by 2030 India's overall projected energy deficit, if we rely only on domestic fuel resources, would be 150,000 Mw. By 2050, it is expected to go up to 412,000 Mw. Nuclear power is the only effective way to bridge this gap. Our internal studies confirm

that, if our plans to expand the use of nuclear power fructify, it should be possible to produce 60,000 Mw of nuclear energy by 2030. This is significant, but still highly inadequate to meet our energy deficit.

We are, however, confident that given India's mastery over key aspects of the three-stage closed nuclear fuel cycle, we can leap-frog into the future. Based on our ongoing research into advanced fuel cycles, nuclear scientists calculate that we could close the energy deficit gap of over 400,000 Mw by 2050.

Many way-stations towards this target have been identified, and several bench-marks achieved. Our 500 Mw prototype fast breeder reactor has reached an advanced stage of construction. We are experimenting with an advanced heavy water reactor which uses thorium fuel, and has inbuilt proliferation resistant characteristics as also advanced safety and security features. India's experience with fast breeder reactors and the use of the thorium cycle could prove extremely useful to ensure energy security in the future.

International cooperation is a vital aspect in progressing peaceful uses of nuclear energy. While the former Director General of the IAEA has often commended India for its very positive role in the development of nuclear energy for peaceful purposes, I would like to reaffirm that we are ready to place our proven and wide ranging capabilities in the Civil Nuclear sector at the disposal of those engaged in the emerging global renaissance in nuclear energy.

We are today participants in the International Thermonuclear Experimental Reactor [ITER]. We are ready to help countries with small power grids wishing to enter nuclear power generation at low cost. Given our experience with thorium-based nuclear technologies we are ready to contribute to global research and development into new proliferation-resistant fuel cycles.

The peaceful uses of nuclear energy are not just about power. There are promising applications in the area of medicine, agriculture, food production and preservation, and water desalination. India has supplied a Bhabhatron-II Teletherapy unit to Vietnam for Cancer Therapy under a programme initiated by the IAEA. With regard to water management, we have a hybrid Nuclear Desalination Demonstration Plant [NDDP] at Kalpakkam based on Reverse Osmosis, which produces nearly two million litres of water per day and another desalination plant which produces 4.5 million litres water per day. This has greatly helped redress water shortages in some of our coastal areas. Nuclear science has also helped in the rejuvenation of mountain springs that are sources of drinking water in the high Himalayas.

Mr. Chairman,

Last year, a new chapter regarding Civil Nuclear Cooperation internationally was opened as far as India was concerned, following the approval first of an India-Specific Safeguards Agreement by the IAEA, and next, the decision of the Nuclear Suppliers Group to resume Civil Nuclear Cooperation with India. The NSG's decision to recognize India's status as a country with advanced nuclear technology, the clean exemption accorded to India on account of its impeccable record of non-proliferation, and the recognition given to India's responsible use of civil nuclear technology are significant developments. We are now witnessing an explosion in regard to Civil Nuclear Cooperation agreements with countries across the globe.

Mr. Chairman,

India has always been conscious of the possible misuse of sensitive nuclear technologies. India, hence, maintains for this reason, effective export controls on nuclear materials and related technologies. Even though we are not a party to the NPT or a Member of the Nuclear

Suppliers Group, we have adhered even more strictly than many NPT signatories, to non-proliferation norms and requirements. We fully endorse IAEA's concerns in this regard and are supportive of its efforts to raise the bar on these issues.

Mr. Chairman,

The task before the international community is to adopt a more inclusive and forward-looking approach to shape the ongoing nuclear renaissance. At the same time, we believe that efforts to promote peaceful uses of atomic energy would be strengthened by a renewed commitment to the universal elimination of nuclear weapons. India has a longstanding commitment to global non-discriminatory and verifiable nuclear disarmament. India was the first country to call for a ban on nuclear testing in 1954, and for a non-discriminatory treaty on non-proliferation in 1965.

In 1988, India re-emphasized this commitment through Prime Minister Rajiv Gandhi's "Action Plan for Ushering in a Nuclear Weapon Free World and Non-violent Order" at the UN General Assembly. In 2006, India again put forward a set of proposals at the UN General Assembly that outlined specific steps that would lead to the elimination of nuclear weapons. This included a proposal for the negotiation of a Nuclear Weapons Convention that would prohibit the development, production, stockpiling and use of nuclear weapons and providing for their elimination within a specified timeframe.

Mr. Chairman,

It is unfortunate that all these years there has not been much progress in regard to nuclear disarmament. We feel encouraged, however, by some positive signs, of late, of putting nuclear disarmament back on the international agenda. The proposal co-authored by Dr. Kissinger, George Shultz, William Perry and Sam Nunn, leading to the very significant speech made by President Barack Obama at Prague in April this year - wherein he outlines a vision of a world free of nuclear weapons - has gladdened our hearts. We also feel greatly encouraged by the willingness of the United States and Russia to negotiate further cuts in their nuclear arsenals.

Mr. Chairman,

I would like to recall here that in the early 1980s, India had tabled a Resolution entitled Convention on the Prohibition of the Use of Nuclear Weapons which calls for the prohibition of the use of nuclear weapons under any circumstances. In 1988, India initiated a Resolution calling for immediate steps to reduce the risk of accidental use, including de-alerting and de-targeting of nuclear weapons.

Mr. Chairman,

This brings me to the threat posed by terrorists gaining access to nuclear materials and technologies. In our view, nuclear terrorism possibly poses the gravest threat to global security and mankind to-day. An act of nuclear terrorism could have catastrophic consequences. Preventive measures are vital. The world must acknowledge and admit the possible link between WMDs and international terrorism.

In addition, we believe there is need to put in place an international response. India's resolution on measures to prevent terrorists from gaining access to WMDs, adopted by consensus at the UNGA, aims at strengthening international resolve to prevent terrorists from acquiring weapons of mass destruction. India greatly welcomes President Obama's initiative to host a Summit on Nuclear Security in April next year. India will contribute actively to the success of the Summit.

Mr. Chairman,

In conclusion, I would like to quote from a most recent speech of Indian PM at the International Conference on Peaceful Uses of Nuclear Energy in September this year. I believe, this aptly summarizes the approach we can follow to ensure access to nuclear energy as well as its security "If we use the power of the atom wisely for the universal good, the possibilities are unbounded. If we do not, the consequences would also be devastating for peace and progress that all nations seek for their people. The choices are stark and the challenges are indeed daunting, but it is not beyond the imagination of the human mind to devise suitable solutions and strategies. This task will require the collective will, wisdom and determination of the world community, but it is a task that can no longer be put off".

**Manama(Bahrain)**  
**December 12, 2009**