

Statement by Dr. R.K. Sinha, Chairman, Atomic Energy Commission, and Secretary to the Government of India for the Department of Atomic Energy, at the 2013 IAEA International Ministerial Conference on Nuclear Power in the 21st Century held at St. Petersburg, Russian Federation, June 27-29, 2013

Mr. Chairman,

India joins the previous speakers in complimenting the IAEA and the Government of Russian Federation and OECD/NEA for organising this important Ministerial Conference in this beautiful and historic city of St. Petersburg.

Mr. Chairman,

Following the Fukushima-Daiichi (F-D) accident in Japan, the two very important considerations for nuclear power, namely, nuclear safety and radiological safety, have occupied centre stage in many a forum. In India, the utility (NPCIL), and the regulatory agency, Atomic Energy Regulatory Board (AERB), independently conducted extensive safety reviews, pursuant to which necessary measures to further augment safety of our operating nuclear power plants (NPPs), under extreme external events, have been taken. India will continue to contribute to the IAEA efforts in enhancing international cooperation in nuclear safety matters, especially through the various activities under the IAEA Action Plan for Nuclear Safety.

I wish to draw attention to the World Health Organisation's (WHO) report released in February 2013 on the studies carried out on the health risk assessment, and which is based on preliminary radiation dose estimation in the areas affected by the release of radioactivity from the Fukushima-Daiichi reactors. To avoid an under-estimation of risks, the WHO Expert Group adopted the Linear-No-Threshold (LNT) model in their assessment and they also made certain assumptions, which reflect a high degree of conservatism. In spite of this conservative approach, the WHO Report concludes that the possible impact of Fukushima accident on the health of the population in the affected regions is practically insignificant.

More recently, following the 60th Session of the Vienna-based United Nations Scientific Committee on the Effect of Atomic Radiation (UNSCEAR) held in the last week of May 2013, there was a Press Release from the UN Information Service. It cites the conclusion of the Session, I quote, "Radiation exposure following the nuclear accident at Fukushima-Daiichi did not cause any immediate health effects. It is unlikely to be able to attribute any health effects in the future among the general public and the vast majority of workers". It is further reported there, that, "On the whole, the exposure of the Japanese population was low, or very low, leading to correspondingly low risks of health effects in later life". The final report of UNSCEAR to be submitted to the UN General Assembly later this year may further help allay the public concerns. In this context, it may be reiterated that it is absolutely essential that the extremely large margins of safety, inherent in the prescribed permissible radiation dose limits, are adequately explained to members of the public, as well as to decision makers. I am sure, as an outcome of these and other ongoing studies, a more rational, science-based criteria for post-accident evaluation, and restrictions on land use in contaminated areas, will emerge.

The above-mentioned international findings go to also endorse the view that India articulated at the IAEA General Conference in September 2012, when we said that 'it is essential to project credible and authentic scientific information on the effects of nuclear radiation on human health to dispel misconceptions about nuclear power'.

Coming from international peer groups, the WHO and UNSCEAR findings would be extremely important to policy makers and other stakeholders, including the IAEA and this Conference. The Conference may give careful consideration to these findings, even as we all need to continue to attach the highest importance to nuclear and radiological safety.

Mr. Chairman,

The Prime Minister of India said during an event in January 2013, "As we pursue our national growth objectives to meet the rising aspirations of our people, the supply of affordable clean energy will be one of our foremost national challenges and a key priority for our government. Nuclear energy will remain an essential and increasingly important element of our energy mix. We are in the process of expanding our indigenous nuclear power programme." He also reiterated that 'we will continue to ensure that nuclear power remains wholly safe'.

India's continued progress in the industrial front, as well as in enhancing the quality of life of its very large population, depends strongly on assured and sustainable growth in the installed power generation capacity and adequate power availability on the grid at all times, in every part of the vast country. The constraint of depleting reserves of fossil fuels, leave alone the sheer enormity of the quantities of coal required, taken along with the need to shift to low carbon energy sources for addressing the global warming related concerns, would drive the options that could meet the Indian energy needs in future. It is here, that nuclear energy becomes a very important option.

There is no shift in the policy on nuclear power in India that is based on the utilisation of India's nuclear resources of modest uranium and abundant thorium, through the closed fuel cycle option, and the 3-stage programme, aimed at large-scale deployment of Thorium in the long-term.

With regard to current nuclear power projects, the construction of four indigenously designed 700 MWe Pressurised Heavy Water Reactors (PHWRs), two each at existing sites of Kakrapar in Gujarat and Rawatbhata in Rajasthan, is in progress. In addition, sixteen more PHWRs of 700 MWe capacity will be progressively taken up for construction (twin units or quadruple units) at five different inland sites already identified. India is also planning to set up PWRs of indigenous design by mid 2020s.

Thanks to the long-standing nuclear co-operation between India and the Russian Federation (the erstwhile USSR), two Light Water Reactors (LWRs) of Russian design, each of 1000 MWe capacity, are currently being set up in Kudankulam. The unit-1 of Kudankulam NPP is in an advanced stage of commissioning, following multi-tier safety reviews. The 2nd unit is envisaged to follow suit about six months thereafter.

Under the international civil nuclear co-operation agreement, additional options for expanding installed capacity through import of Light Water Reactors have been envisaged, and related discussions are underway with identified vendors, for setting up these reactors at designated coastal sites, including Kudankulam.

The first commercial fast breeder reactor of India - PFBR of 500 MWe capacity - is at an advanced stage of completion of construction at Kalpakkam. All the major equipment of PFBR have been erected and the loading of dummy fuel bundles at peripheral locations is in progress. Indigenously developed mixed oxide type fuel pins for the first core of the PFBR are under manufacture and progressive delivery.

Mr. Chairman,

The safety of nuclear power plants (NPPs) in India is regulated by the Atomic Energy Regulatory Board (AERB). The regulatory practices followed and the standards developed by AERB are in line with IAEA Safety Standards and international best practices. With over three decades of experience and established plan for augmentation of regulatory resources, AERB will be able to meet the future regulatory demands for reactors based on several different designs and technologies, and their associated fuel cycle facilities.

The IAEA Operational Safety Review Team (OSART) Mission for review of Rajasthan Atomic Power Station 3&4 took place from October 29 to November 14, 2012. The OSART Mission team reported a series of good practices and made recommendations and suggestions to further reinforce safety practices. The Indian Government has decided to

declassify the report of the OSART mission. India, as one of the leaders in nuclear technology, remains committed to the highest levels of safety in its NPPs and in the associated fuel cycle facilities.

Mr. Chairman,

Energy is one of the main drivers for the growth of human civilisation and it is imperative to achieve sustainable means to meet the developmental aspirations of the global mankind, without affecting the environment. Nuclear energy is an important component of an energy mix for sustainable long-term energy security. The IAEA - INPRO projection of the growth of nuclear energy cites an installed nuclear capacity of 1250 GWe (moderate growth) and 1875 GWe (high growth) by 2050. In order to facilitate the enhancement of the global reach of nuclear energy, while at the same time addressing the proliferation concerns, judicious choice of 'safeguards-friendly technological options of fuel cycle and advanced reactor technologies' would become increasingly necessary. In this context, the utilisation of thorium based fuel cycle offers attractive pathways. It is heartening to note that the fourth and final Panel Session of this Conference is devoted to the topic, 'Drivers for deployment of sustainable and innovative technology', and which includes due emphasis on thorium utilisation among the topics to be discussed.

To conclude, Mr. Chairman, let us remind ourselves that the nuclear power era is nearly 60 years old, and that the current global nuclear competencies are capable of meeting the challenges to expand the nuclear power horizon for the greater benefit of the mankind.

Thank you Mr Chairman.