

Founder's Day Address
Wednesday, October 30, 2019
by
Mr. K N Vyas
Chairman, AEC & Secretary, DAE

Good morning to all my Respected Seniors, Dear Colleagues, Representatives from the Media, Ladies and Gentlemen.

We have assembled here this morning on the occasion of the 110th birth anniversary of Dr. Homi Jehangir Bhabha, a day which is celebrated as the Founder's Day. Among all those who are present today, few would have had a chance to meet the legend and possibly none would have worked with him. I am grateful to all my seniors, who have guided the department and ensured that all of us are continuing to walk the path he carved for us.

Dr. Bhabha's tenure was of planting the seed of clean energy through limited resources of Uranium in our country. However, in a very short period of time, he set up an Organisation, which could take the challenges of developing facilities for the entire fuel cycle with indigenous resources.

Today is the day, when we assemble here to share our achievements and failures, introspect ourselves with honesty and re-calibrate ourselves.

For fulfilling Dr Bhabha's vision, over a period of time, DAE has set up 30 units, covering areas from basic science research to nuclear technology. These units build industrial and human capital for the country, which helps in participation of Indian industries and personnel in various projects, world over.

I will now present to you about some of our major achievements during the last one year.

Tarapur Atomic Power Station Units (TAPS 1 &2), connected to the grid in April and May 1969, have completed 50 years of safe operation. It goes to the credit of NPCIL and BARC that required inspections have been carried out and based on the detailed examination of the same; AERB has extended the operating license. TAPS-1&2 are currently the oldest operating power reactors in the world, producing clean and reliable power at about two rupees per unit.

On the industrial front, all the production units of the Department viz. NFC, HWB, UCIL, IREL, BRIT and ECIL have been meeting their targeted production. IREL will be setting up Rare Earth & Titanium Theme Park in Bhopal, MP. IREL has also successfully developed a flow sheet and produced 99% pure hafnium oxide from NFC raffinate. These are value added products.

Nuclear Fuel Complex (NFC), has completed supply of 37 element fuel bundles to KAPS-3, first 700MWe PHWR, towards initial core requirement by establishing fabrication facility for 37 element fuel bundle manufacture. NFC has continued to supply many specific components and tubes for vital use to the Department.

67 ultra-stable power converters built at ECIL, Hyderabad for FAIR accelerator in Germany have been shipped to Germany after Factory acceptance clearance from FAIR, Germany. These power converters are developed in collaboration with BARC, RRCAT and VECC. ECIL has successfully delivered latest model M3 EVMs – 3.3 lakh units & VVPATs – 5.8 lakh units for General Elections 2019.

A **CO**mpact facility for **R**eprocessing of **A**dvanced fuels (CORAL) has been relicensed by the regulatory authority up to 2023, and the 50th reprocessing campaign of FBTR spent fuel is in progress.

Like last year, this year also, all of our research facilities, including Synchrotron, Cyclotron, Dhruva, Fast Breeder Test Reactor (FBTR) etc. continued to achieve a satisfactory performance.

Some other Mega Science Projects in which India is participating, sheerly due to its intellectual and industrial capabilities are CERN, LIGO (Laser Interferometer Gravitational-Wave Observatory), SKA (Square Kilometre Array), TMT (Thirty Meter Telescope), FAIR (Facility for Antiproton and Ion Research). Out of these numerous projects, the project LIGO is being set up at Aundh, in Maharashtra. Participating in these projects brings Indian Scientific community at par with their international counterparts and are part of developing cutting-edge technologies in the country.

It gives me immense pleasure to inform you that, in order to highlight the value and impact of fundamental research to a broad cross-section of audience including students, academicians and industry, and to further strengthen India's participation in Mega-Science Projects, Department of Atomic Energy (DAE), Department of Science and Technology (DST) and National Council of Science Museum, Ministry of Culture are jointly organising a multi-venue mega-science exhibition, Vigyan Samagam at Mumbai, Bengaluru, Kolkata, and New Delhi. This travelling exhibition is first-of-its-kind in the world showcasing all the Mega Science projects on a single platform. The footfalls, both at Mumbai and Bengaluru, have been very impressive with more than 1.3 lakh visitors at both the cities.

DAE has made huge progress in utilisation of radiation technologies for societal uses. It includes nuclear technologies concerning human life, be it power, health, agriculture or human capital development.

In the health care sector, development of cost effective drugs for cancer care has been a priority for us. 21 numbers of radiopharmaceuticals for diagnosis and therapy and two

radionuclide generators have been developed in the recent past. Nuclear waste has always been considered as a resource in India and as a new development, clinical grade Yttrium-90 in 90Y-Acetate form has been extracted from high level waste trials for patient care have been started, subsequent to RPC clearances.

Tata Memorial Centre (TMC), a unit under DAE, today has seven hospitals and one research institute catering to the needs of more than half a million patients every year, among which, ~100,000 are new patients.

BRIT has introduced 4 new Radiopharmaceuticals viz. 99mTc- HYNIC TATE injection for imaging of Neuro-endocrinetumours, 188Re-HEDP Cold Kit and 177Lu-EDTMP injection for bone pain palliation and 131Iodine-Lipiodol injection for treatment of liver.

As a part of development for societal applications by RRCAT has developed two medical devices viz.

- i) 'TuBerculoScope', a low cost, compact and portable optical device for rapid detection of TB, and
- ii) An 'OncoDiagnoscope', which is a low cost Raman probe, for in situ spectroscopic measurements of biological tissues. This is a compact and portable system for the non-invasive detection of (pre)cancerous lesions in oral cavities. This device was successfully deployed at six cancer screening camps by doctors of AIIMS, Jodhpur.

These technologies are ready for transfer to the local industry.

Respected Seniors and Dear Colleagues,

While these were some of our major achievements in the last one year, we have a long way to go in achieving self-sufficiency in the three stage nuclear power programme. There are challenges in this, however, I am confident that these can be overcome by your dedicated contribution to fulfil the desires of our visionaries. We must put in our maximum efforts in designing, planning and overall execution of the projects to make optimum use of all the resources available to us.

I would also like to remind all present here that we are celebrating Birth Centenary Year of another great personality Dr. Vikram Sarabhai, in association with Department of Space. A curtain raiser highlighting Dr. Sarabhai's contribution for DAE related activities, was organised recently at Convention Centre. This shall be followed by different programs at different locations.

As I conclude, I wish all of you a very happy Founders Day and wish that collectively we will fulfil the balance of the dream of our Visionary founder Dr. Homi Jahangir Bhabha and his equally capable successor Dr. Vikram Sarabhai.

Thank you very much and Jai Hind.