

DAE delivers the benefits of indigenous development to the Nation

The Department of Atomic Energy continues to pursue its mandate of exploiting nuclear energy for power and non-power purposes. It has performed well during the financial year 2004–05 and delivered the benefits of indigenous development to the nation.

Electricity generation from nuclear power plants in this financial year was 17,010 million units. Five nuclear power stations in the country were awarded gold shield, silver shield and certificates by the Government of India for their meritorious performance during the years 2000–01 to 2003–04. Unit 2 of the Narora atomic power station had a longest continuous operation of 272 days from 21st September 2003 to 19th June 2004. Continuous operation of 238 days was also achieved for the Units 1 & 2 of Narora Atomic Power Station. Refueling of Unit-1 of Tarapur Atomic Power Station was accomplished in 26 days.

Nine new nuclear power plants (6 PHWR, 2 LWRs and 1 FBR) are at present under construction, which will add a total capacity of 4460 MWe to the electricity generation in the country. One 540 MWe PHWR unit at Tarapur (TAPP-4) achieved criticality on 6th March 2005 and is expected to be commissioned ahead of schedule. This is the first 540 MWe nuclear power plant of the country built on indigenous technology. A total of 1300 MWe capacity is planned to be added during the X Plan and 5915 MWe in the XI Plan. Construction of these reactors is on schedule. As additionality to the indigenous, self-reliant three stage nuclear power programme, it is planned to set up light water reactors (LWRs) based on imported technology. Two such reactors are already under construction at Kudankulam in Tamil Nadu. On

October 23, 2004, the Prime Minister launched the construction of first 500 MWe Fast Breeder Reactor (FBR) at Kalpakkam in Tamil nadu.

In the field of nuclear agriculture DAE is working with State Farms Corporation of India (Ministry of Agriculture) for enhanced seed production of released varieties and promotion of their large-scale cultivation. A new Trombay Groundnut variety, TG 37A was released and gazette notified by Ministry of Agriculture for commercial cultivation in agro-climatic zone-I and confectionery groundnut variety TPG-41 was released for all India commercial cultivation. The total number of Trombay crop varieties released and notified for commercial cultivation so far has reached 24. The State Seed Committee of Maharashtra has released a soyabean variety TAMS-38 developed at Trombay for commercial cultivation for Vidharbha region.

KRUSHAK (Krushi Utpadan Surakshan Kendra), a low dose radiation processing plant at Lasalgaon, near Nasik in Maharashtra for processing onions, pulses, rawa and turmeric and a high dose radiation processing plant at Vashi, Navi Mumbai, Maharashtra for processing spices are operating well. MoUs have been signed for multi-product irradiators with 13 (one in co-operative sector) entrepreneurs. First private sector commercial Gamma Irradiation Plant in the eastern region set up by M/s Organic Green Foods Ltd, Kolkata, was commissioned in August 2004. Three more plants are expected to be commissioned during this year.

In the field of urban/rural waste management, the sewage Sludge Hygeinisation Research Irradiator (SHRI) at Vadodra has its entire production of hygeinised sludge booked

by the users for the next year. The hygeinised sludge has been tested as manure in the agriculture field. Six Nisarg-runa plants of capacities 1 to 5 tonnes/day for treating biodegradable wastes from kitchens, vegetable markets, agricultural farms and abattoirs have been set up. These produce high quality manure for use in agriculture and methane for use as fuel. Many more plants are in pipeline. Large capacity plants are on the drawing board.

For health related services, plan to network 19 Regional Cancer Centers in the country with Tata Memorial Hospital (TMH), Mumbai through satellite based telemedicine links for providing countrywide service in cancer is progressing well. In the Phase-I, TMH has been connected with Dr B. Barooah Cancer Institute (BBICI), Guwahati and Dr B.K. Walavalkar Hospital, Dervan, Ratnagiri, Maharashtra. District hospitals in the north east states have been linked. Telepathology is in operation.

1.8 million litres/day capacity for production of potable water based on Reverse Osmosis (RO) process is operational at Kalpakkam. Construction of 4.5 million litres/day plant based on Multi Stage Flash (MSF) Distillation is in progress. Technology of RO plants have been transferred to seven parties for producing drinking water in villages. Dialogue for setting up desalination plant at Lakshadweep and Diu is going on.

In order to strengthen the linkage between DAE and University system as also the linkage between basic research and its translation to technologies, several programmes have been initiated. UGC-DAE consortium for scientific research, National Initiative on Undergraduate Science (NIUS) and Homi Bhabha National Institute (HBNI) are some important examples.