

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 776
ANSWERED ON 07.02.2024

Development of Nuclear Science

776. SHRI D.K. SURESH :

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government has any proposal to promote and develop nuclear sciences in the country and if so, the details thereof;
- (b) whether the Government has taken note for building up adequately trained manpower for the development of the atomic energy programmes and if so, the details thereof; and
- (c) whether the Government has earmarked adequate funds to provide financial assistance for further studies in nuclear sciences and if so, the details thereof?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH):

- (a) To promote the Nuclear Sciences in the country and instilling interest in nuclear sciences, periodic visits to Department facilities like Bhabha Atomic Research Centre (BARC), Indira Gandhi Centre for Atomic Research (IGCAR), Raja Ramanna Centre for Advanced Technology (RRCAT) and Variable Energy Cyclotron Centre (VECC), which are multi-disciplinary Research Centres having excellent infrastructure for advanced Research and Development with expertise covering the entire spectrum of usages of atomic energy are arranged for school and college students for motivating them towards Science, Technology, Engineering and Mathematics (STEM) education.

Students from various schools are invited on National Science day every year to visit various nuclear facilities & the exhibitions that display various nuclear technologies developed by Department. In addition, internship opportunities are offered to college students across the country to boost their interest and knowledge in the field of nuclear sciences.

Department of Atomic Energy (DAE) organizes Outreach Programme for college students from various universities in the country to attract young engineers and science post graduates to explore their career in field of nuclear science. This year one of the outreach programmes was conducted at women's University "Bhanasthali Vidyapeeth" in Jaipur, with an aim to encourage more number of female candidates to apply for the vacancies in DAE.

DAE through Board of Research in Nuclear Sciences (BRNS), collaborates with educational institutes, universities and national laboratories for conducting R&D to promote and encourage scientific research in field of nuclear science in the country. BRNS also provides financial assistance to organize symposia/conferences/workshops on topics of relevance to the DAE programmes.

Research and Development is carried out in the field of Agriculture, Physical sciences, Chemical sciences, Bio-sciences, Food Preservation, Water Desalination and Water Purification, Nuclear Reactor Technologies, Reprocessing and Waste Management. In this process several technologies are developed and are useful for societal application. These technologies are available for technology transfer on non-exclusive basis to entrepreneurs for commercialisation.

Further, a programme called Advanced Knowledge and Rural Technology Implementation (AKRUTI), for deployment of Spin-off technologies in rural areas has been formulated for skill development & socio-economic growth of the rural areas.

(b) & (c) For building up adequately trained manpower for the development of the atomic energy programme, DAE is running its Training Schools for Training Young Engineers and Science Postgraduates through its Orientation Course for Engineering Graduates and Science Postgraduates (OCES) program. This one year long training program is being run by DAE every year since 1957. Every year around 200 Engineering graduates and Science Postgraduates are trained to become Nuclear Scientists. The coursework done by the Trainee Scientific Officers (TSOs) earns them credits towards an M.Tech degree. The TSOs are encouraged to pursue M.Tech under the aegis of HBNI by producing a M.Tech dissertation subsequent to their absorption in one of the DAE units.

To cater to the need of technical staff, Graduates in Science and Diploma holders in Engineering are recruited through a two-year Stipendiary training scheme (Category-I). They are absorbed as Scientific Assistant-C after successful completion of the training in the various activities of DAE. Similarly, candidates having qualification of HSC (science) or SSC followed by ITI certificate are also recruited under Two-years Stipendiary Training Scheme (Category-II) and they are absorbed as Technicians after successful completion of the training in the various facilities of DAE.

The DAE Training Schools also have DAE Graduate Fellowship Scheme (DGFS) wherein a few selected candidates are allowed to pursue M.Tech in a few designated institutes known for their academic excellence and are paid stipend by DAE. Additionally, their tuition fee is reimbursed by DAE. On successful completion of M.Tech these candidates are absorbed in DAE. On absorption these trainee officers undergo 4-months course in Nuclear Science and Technology. These Trainees are placed to various units of the DAE.

Dr. K.S. Krishnan Research Associates Fellowship (KSKRA) is one of the flagship research programmes of DAE through which the Scientific Officers are selected and appointed. Research Associates are selected under this programme from within India as well as Indian scientists residing abroad and they are given an opportunity to work on R&D programmes of national

importance relevant to the DAE mandate and offers prospects of regular absorption in DAE units. Under this scheme candidates with Ph.D. Degree in Engineering or Master's Degree in Engineering with minimum 2 years R&D experience or Ph.D. Degree in Science with 2 years experience are eligible for applying. After completion of the 2 years associateship, subject to satisfactory performance, they are absorbed in DAE in the grade of Scientific Officer D or E level (level 11 or 12).

DAE also conducts doctoral programme (Ph.D /Integrated Ph.D (Single and Dual Degree)) through Homi Bhabha National Institute (HBNI) under DAE Doctoral Fellowship Scheme (DDFS). HBNI is a deemed to be university and is a Grant-in-Aid institution of the DAE. HBNI is a research university that educates students at the doctoral and post-graduation level, and pursues research in accordance with department's mandate. These students do research work in the domain of Nuclear Science and Engineering.

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