

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO - 484
ANSWERED ON 23/07/2026

TRAINING PROGRAMMES IN NUCLEAR TECHNOLOGY

484. SHRI VIJAY CHINTAKAYALA

Will the PRIME MINISTER be pleased to state:-

- (a) the details of training centres/ institutes in nuclear technology functioning at present, including location, courses offered and training capacity, institute-wise
- (b) the details of skill development and workforce training programmes conducted for technicians, engineers and skilled manpower in nuclear energy and allied sectors during the last five years, year-wise;
- (c) the details regarding the number of trainees trained, certified and absorbed in nuclear facilities and related industries during that period, institute-wise; and
- (d) whether Government has taken any steps to strengthen the skill development ecosystem in nuclear technology and if so, details thereof?

ANSWER

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

- (a) The details of the training centres, courses offered and training capacity in the field of nuclear technology are as follows:
 - (i) For Bhabha Atomic Research Centre(BARC)

Sr No.	Institute	Courses Offers	Institute Capacity
1	BARC Training School, Mumbai, Maharashtra	Engineering Design, Development, Operation and Maintenance of Nuclear Reactors, Research in frontier areas of Basic and Engineering Sciences	230
2	BARC Training School, Atomic Minerals Directorate(AMD) Hyderabad, Telangana	Exploration Techniques for Uranium and other Atomic Minerals and related R&D activities	25

- (ii) Global Centre for Nuclear Energy Partnership (GCNEP), Bahadurgarh has **five (05)** specialised schools for international collaboration in nuclear energy research.

Sr No.	Institute	Courses Offers	Institute Capacity
1)	School of Advanced Nuclear Energy System Studies (SANESS)	Reactor systems, fuel cycle studies including thorium fuel cycle, Accelerator Driven Systems, emergency planning and management studies.	20 to 45
2)	School of Nuclear Security Studies, (SNSS)	Nuclear security, personnel and material access control & intrusion detection, physical security, information security, surveillance, explosives and other contraband detection.	20 to 45
3)	School on Radiological Safety Studies (SRSS)	Dispersion modeling and impact assessment of radioactivity releases, decision support systems for nuclear emergency management, training for the first responders for radiological emergencies, study on the impact of nuclear and radiological emergencies	20 to 45
4)	School of Nuclear Material Characterization Studies (SNMCS)	Nuclear material characterization, non-destructive assay, techniques for nuclear material analysis, control and accounting practices of nuclear material, training in nuclear safeguards and nuclear forensics	20 to 45
5)	School for Applications of Radioisotopes and Radiation Technology(SARRT)	Applications of radio-isotopes and radiation technologies in health care, industry, environment and agriculture for societal benefits.	20 to 45

- (iii) Nuclear Power Corporation of India Limited (NPCIL) imparts specialized training in nuclear technology through its Nuclear Training Centres (NTCs) located at its sites. There are total Seven Nuclear Training Centres (NTCs) located at Rawatbhata Rajasthan (RR) Site, Rawatbhata; Tarapur Maharashtra Site(TMS), Tarapur; Narora Atomic Power Station (NAPS), Narora; Kaiga Generation Station(KGS), Kaiga; Kakrapar Atomic Power Station (KAPS), Kakrapar; Madras Atomic Power

Station(MAPS), Kalpakkam and Kudankulam Nuclear Power plant (KKNPP), Kudankulam. The details are given below:

Course(s) Offered	Duration	NTC Training Capacity (Nos.)						
		RR	TMS	NAPS	KGS	KAPS	MAPS	KKNPP
Orientation Training Program for Graduate Engineers	1 Year	75	50	30	60	60	60	80
Orientation Training Program for Supervisor Trainees	1.5Years	60	60	30	50	60	25	60
Orientation Training Program for Technician Trainees	2 Years	60	80	50	50	60	50	60

- (b) Human resource development forms a cornerstone of strategy for indigenous technological development and innovation. Department of Atomic Energy (DAE) has established robust programme to create a highly skilled workforce for nuclear science, technology, and radiation safety. The Orientation Course for Engineering Graduates and Science Postgraduates (OCES), conducted annually through the BARC Training School, provides one year of intensive training to young engineers and science postgraduates, who are subsequently absorbed into various units of DAE. DAE Graduate Fellowship Scheme (DGFS), implemented through MoUs with Indian Institute of Technology (IIT) Bombay and IIT Madras, enables selected candidates to pursue M.Tech programmes at premier academic institutions, followed by structured training in nuclear science and technology and are subsequently absorbed in DAE.

Young aspirants having bachelor degree in science / diploma in engineering and trade certificates in ITIs are recruited as Cat-I & Cat-II trainees, respectively. Two-year training in the field of nuclear science and technology is imparted to Cat-I & Cat-II trainees. Subsequent to successful completion of training, they are absorbed in the Department.

BARC also conducts the Radiography Technique and Radiological Safety Level-2 training and certification course in association with the Institute for Design of Electrical Measuring Instruments (IDEMI), a Government of India Society under

the Ministry of MSME. Successful completion of the course is mandatory for obtaining Radiation Safety Officer (RSO) certification from Atomic Energy Regulatory Board (AERB). The training and certification from the course enhance employment opportunities in Government organisations and private industries. During the last five years fifteen (15) courses were conducted in BARC.

Technical manpower is also trained through regular courses on radiation safety and non-destructive examination. Capacity building programmes are regularly undertaken in BARC with identified disciplines through apprenticeship training for skill development of youths

NPCIL regularly conducts structured training programmes for engineers, supervisors, technicians and skilled personnel to meet the requirements of operating stations, projects and upcoming nuclear power projects. Every year, orientation training programme for Engineers, Supervisors and Technicians; Skill Development program for technical staff; Leadership & Soft Skills Training Sessions commensurate with the level of the employees; Licensing & Qualification for Operation & Maintenance and core group; Emergency Preparedness & Radiation Safety Training and Industrial Safety Training to all stakeholders, is being conducted. Refresher courses are also being conducted periodically.

In addition, capacity building is also being done through programs available on iGOT Karmayogi Portal for the employees

- (c) During the last five years, a total of 917 Trainee Scientific Officers (TSOs) were admitted to the BARC Training Schools, out of which 863 successfully completed training and were absorbed as Scientific Officers in various units of DAE. During the last five years, the total intake of Category-I and Category-II trainees was 590 and 1,308, respectively. Out of which, 51 Category-I trainees and 107 Category-II trainees have been absorbed into BARC, while the remaining trainees are currently undergoing training. They will be absorbed in BARC upon successful completion of their training.

Additionally, 15 Radiography Technique and Radiological Safety Level-2 courses were conducted during the last five years. A total of 514 participants attended these courses, out of which 446 successfully completed and were awarded certificates.

The details of number and type of employees undergone training at different training centres of NPCIL and subsequently absorbed in NPCIL are given below:

Year	Number of Persons Trained						
	RR Site	TMS	NAPS	KGS	KAPS	MAPS	KKNPP
2021	5 (T)	-	16 (S) 62 (T)	28(E)	10 (S)	-	51 (E)
2022	42 (E)	13 (E)	8 (S) 37 (T)	26 (E)	40 (E)	-	39 (E)
2023	58 (E) 30 (S) 71 (T)	22 (E) 30 (S) 7 (T)	18 (S) 25 (T)	46 (E) 20 (T)	24 (E) 42 (S)	31 (E) 32 (S) 23 (T)	52 (E)
2024	62 (E) 32 (S) 59 (T)	51 (E)	10 (E)	58 (E) 2 (T)	52 (E) 3 (S) 71 (T)	55 (E)	73 (E)
2025	62 (E) 83 (S)	42 (E) 4 (S)	27 (E) 12 (S) 41 (T)	53 (E)	49 (E)	56 (E) 9 (S) 17 (T)	78 (E)

Legends: E-Engineers, S-Supervisors, T-Technicians

- (d) The Government has strengthened the skill development ecosystem in nuclear technology through DAE's structured training programmes for Cat-I and Cat-II trainees, and training & certification in Radiography Technique and Radiological Safety. Additionally, BARC engages with Indian industries through knowledge sharing and handholding for new technology development and manufacturing of reactor equipment and components thus developing nuclear vendors and skilled workforce for self-reliance in the field of nuclear technology.

BARC imparts specialised training to young scientist & engineers through its flagship OCES and DGFS schemes for capacity building in nuclear science and technology.

Departmental officers are also encouraged to pursue higher studies such as M.Tech. and Ph.D. under the aegis of Homi Bhabha National Institute (HBNI), an aided institution under the administrative control of DAE. Scientific Officers are deputed to reputed institutes abroad for specialised R&D work. BARC deputes Scientific Officers to International Atomic Energy Agency (IAEA) for knowledge sharing in specialised fields of nuclear science & technology.
