

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO- 2722**  
ANSWERED ON 19/12/2024

**NEW INDIGENOUS REACTORS**

2722. SHRI AYODHYA RAMI REDDY ALLA

Will the PRIME MINISTER be pleased to state:-

- (a) the measures taken by Government to ensure that the new indigenous reactors designed and constructed with cutting-edge safety features are aligned with international best practices and standards;
- (b) the manner in which Government will address potential public concerns and perceptions regarding the safety and environmental impact of the new reactors, particularly in light of past nuclear accidents; and
- (c) the details of Government's strategy for fostering innovation and R&D in the domestic nuclear industry, to ensure that India remains competitive in the global nuclear landscape?

**ANSWER**

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

- (a) Nuclear power reactor designs in the country are not static and the latest developments in evolving global standards, events & operating experience, R&D in nuclear technology and materials etc. are considered in the design of new nuclear power reactors and it is ensured that they are state-of-the-art in terms of safety. Nuclear power plants are constructed to highest safety & quality standards. Indian nuclear power reactors are also peer reviewed by international organisations like World Association of Nuclear Reactors (WANO) and the international best practices are implemented in Indian reactors. There is also a robust multi-tier safety review mechanism in place by NPCIL and AERB to ensure the highest safety standards.
- (b) Environmental Survey Laboratories (ESLs) of Bhabha Atomic Research Centre, established at Nuclear Power Plants (NPP), regularly monitor different environmental matrices around NPP sites and demonstrate compliance of regulatory limits stipulated by Atomic Energy Regulatory Board, ensuring safe operation of NPPs. Also, a twenty-year study, carried out by BARC, around NPP sites for the period 2000 to 2020 concluded that the public doses around NPPs are 2 to 3 orders below the regulatory limits, ensuring safe, efficient operations, and strict regulatory compliance. The findings are published in a reputed international journal "Science of Total Environment" 914 (2024) 169936.

ESLs regularly carry out public awareness programs to villagers and to educational institutes to address public concern. In addition, a large public outreach on-going programme, based on a multipronged approach, is implemented by NPCIL to spread awareness about nuclear power, address the apprehensions of the people to allay their concerns (including perceptions regarding the safety and environmental impact) in a simple, understandable and credible manner.

- (c) The Government is fully supporting the development of advanced technologies for the indigenous three-stage nuclear power programme. While the first stage Pressurised Heavy Water Reactor technology has been mastered and reached commercial maturity, development of advanced technologies of second stage Fast Breeder Reactors and third stage thorium-based reactors along with associated fuel cycle technologies is being supported by the Government. Numerous indigenous and spin-off technologies encompassing nuclear and non-nuclear sectors are also being transferred to industry/MSME/Start-ups for commercialization through Atal Incubation Centres (AICs) established at a number of DAE units.

\*\*\*\*\*