

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO-485
ANSWERED ON 04/12/2025

NUCLEAR POWER PLANTS AND SAFETY STANDARDS

485. SHRI DEEPAK PRAKASH
SHRI CHUNNILAL GARASIYA

Will the PRIME MINISTER be pleased to state:-

- (a) whether Government proposes to establish new nuclear power plants in the country;
- (b) if so, the details, thereof;
- (c) the estimated timelines for construction of India's Small Modular Reactors (SMRs) and the expected dates of their commissioning;
- (d) the budgetary provisions made, so far, for the research, design, and deployment of SMRs and the manner in which the allocated amount would be utilized;
- (e) whether Government has formulated an action plan to ensure nuclear and radiation safety and nuclear security; and
- (f) if so, the details thereof?

ANSWER

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

- (a) Yes.
- (b) There are 18 new reactors with a total capacity of 13.6 GW at various stages of implementation which are expected to be completed progressively by 2031-32. In addition, 20 indigenous Pressurised Heavy Water Reactors (PHWR) of 700 MW each in two fleets of 10 reactors each (one at existing and approved sites and another at a new site) along with Light Water Reactors with foreign cooperation at existing sites are planned. Under the Nuclear Energy Mission, BARC has planned to establish demonstration units of the 200 MWe Bharat Small Modular Reactor (BSMR-200) and 55 MWe Small Modular Reactor (SMR-55) at DAE sites.
- (c) & (d) Under the Nuclear Energy Mission announced in the Union Budget 2025-26, a total budgetary provision of ₹20,000 crore has been made for the research, design, development, and deployment of Small Modular Reactors (SMRs). This allocation is aimed at supporting India's objective of developing and operationalizing at least five indigenously designed SMRs by 2033.

As part of this initiative, BARC has already undertaken design and development work on SMRs namely,

1. 200 MWe Bharat Small Modular Reactor (BSMR-200),
2. 55 MWe Small Modular Reactor (SMR-55), and
3. Up to 5 MWth High temperature gas cooled reactor meant for hydrogen generation.

It is proposed to construct the lead units of these reactors at DAE site for technology demonstration. The demonstration reactors are likely to be constructed in 60 to 72 months after receipt of administrative and financial sanctions.

The estimated utilisation of the allocated funds by BARC toward setting up SMRs is mentioned below:

Reactor	Cost Outlay (Rs Cr)
BSMR-200 (lead unit)	5960
SMR-55 (2 units)	7000
HTGCR (lead unit)	320
Design, engineering & development works (common to all)	800

(e) & (f) A system to ensure safety of nuclear power plants and a robust regulatory mechanism of safety reviews at multiple levels both within the utility and regulatory authority are in place. The safety of nuclear power plants is continuously monitored and reviewed by the AERB. Further, safety is not static and improvements/ upgrades are effected in nuclear power plants including older plants based on evolving global standards, events and operating experience feedback. As far as nuclear security is concerned, multiple security systems, based on physical security (CISF cover), electronic systems and systems for ensuring cyber security are in place at all nuclear power plant sites. These systems are subjected to periodic audits, reviews and necessary upgrades.
