

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO-489
ANSWERED ON 04/12/2025

STATUS OF KAKRAPAR UNIT-3

489. SHRI AYODHYA RAMI REDDY ALLA

Will the PRIME MINISTER be pleased to state:-

- (a) the manner in which the commissioning of Kakrapar Unit-3 in 2025 fits into India's baseload projections for 2030-50 and what trade-offs are being considered in relation to the rapid scale-up of renewable-plus-storage electricity systems for achieving the Net-zero target by 2070;
- (b) which specific design, manufacturing and supply-chain milestones achieved during the implementation of this project are expected to reduce dependence on imported nuclear components for future reactors and the manner in which Ministry proposes to quantify the economic sovereignty gained; and
- (c) the probabilistic risk assessment (PRA) figures for Kakrapar Unit-3, particularly the core damage frequency and seismic margin beyond the design-basis earthquake?

ANSWER

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

- (a) The successful commissioning of Kakrapar Unit-3 (KAPS-3) in June 2023, the first of a kind indigenous Pressurised Heavy Water Reactor (PHWR) was a significant milestone in India's quest to add clean base load capacity towards Net Zero by 2070. No tradeoffs are being made against scale up of renewable plus storage by installing nuclear power capacity, as considering the large clean energy capacity required for achievement of Net Zero, both renewables with storage and nuclear power plants have to be deployed in large numbers.
- (b) KAPS-3, the first of a kind indigenous 700 MW PHWR with advanced safety features was designed by NPCIL. Its components / equipment were supplied by Indian industries and works executed by Indian contractors. The fully indigenous 700 MW PHWR would be the mainstay of the Indian nuclear power programme in future contributing to the goal of Atma Nirbhar Bharat.
- (c) The Core Damage Frequency & Seismic Margin beyond design basis earthquake of KAPS-3 are 6.34×10^{-08} /Reactor/Year and 33% respectively.
