GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 801
TO BE ANSWERED ON 09.02.2023

Safety checks of nuclear reactors

801 Shri Binoy Viswam:

Will the PRIME MINISTER be pleased to state:

(a) the details of all nuclear reactors which have completed their originally planned lifespan;

(b) the details of regulations in place for mandatory safety checks of nuclear reactors which have completed their originally planned lifespan;

(c) the details of the systemic life assessment studies undertaken for nuclear reactors in the country during the last five years;

(d) the details of the technology and expertise possessed by Government for decommissioning of nuclear power plants; and

(e) the details of the safety risks posed by the Tarapur 1 and 2 reactors considering that these reactors completed their originally planned 40-year lifespan in 2009?

ANSWER

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

(a) Presently, there are 22 reactors in operation in the country. The original planned lifespan of the old reactors i.e. TAPS-1&2, RAPS-1&2 & MAPS-1&2 is completed in terms of years, since start of operation. However, in terms of the Effective Full Power Years (EFPY) of operation, life extension measures, upgrades undertaken and regulatory reviews in these reactors, the operating license of these reactors is in place. The licensing and operation of these reactors like other reactors, is carried out periodically as per the safety codes of the Atomic Energy Regulatory Board (AERB), in line with international practices.

(b) As a part of periodic licensing of reactors, the AERB Safety Code on 'Nuclear Power Plant Operation' contains requirements for operation of NPPs, including those related to in-service inspection, surveillance, maintenance and plant life management programmes at NPPs. They provide for surveillance of items important to safety and life management of NPPs. Based on the outcome of the Periodic Safety Review (PSRs) of the NPPs which includes safety assessment of structures, Systems and Components (SSCs) the decision for further operation of NPPs or decommissioning is taken.

(c) Assessment of health of systems, structures and components (SSC) important for safe and reliable operation of the nuclear power plants is an ongoing exercise in NPCIL. There is a detailed In-Service Inspection (ISI), life assessment, monitoring and extension programme in place as per stringent guidelines. The assessment follows a systemic approach which includes regular monitoring of data collected after inspection of SSCs, regular monitoring of process parameters, preventive maintenance programme, regular system upgradation based on operation feedback, periodic safety reviews etc.

(d) Adequate technical expertise for decommissioning of a nuclear power plant is available in the country. The capability to remove/replace and safe disposal of the core components, such as coolant channels, feeders, boilers hairpin etc is demonstrated successfully in various reactors, which is similar to the requirements for decommissioning.

(e) The design of nuclear power plants is inherently robust and they can be operated beyond their initial economic life based on systemic life assessment studies and undertaking necessary life extension measures & safety upgrades as needed. Based on the various surveillance results, In-Service Inspection programme, structural integrity analysis and major upgrades carried out in TAPS 1&2, it is concluded that they pose no safety risk.

*****