

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 1285**  
TO BE ANSWERED ON 14.12.2023

**Nuclear Waste Management System**

1285 Shri Abir Ranjan Biswas:

Will the PRIME MINISTER be pleased to state:

- (a) whether Government has any transparent or comprehensive Nuclear Waste Management System;
- (b) if so, the details thereof and if not, the reasons therefor; and
- (c) the details of new steps taken by Government to set up a balanced and transparent Nuclear Waste Management System?

**ANSWER**

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

(a) to (c) Yes Sir.

1. Safe management of nuclear waste has been accorded high priority right from the inception of our nuclear energy program. Management of radioactive waste in Indian context includes all types of radioactive wastes generated from entire nuclear fuel cycle and also from installations using radionuclides in medicine, industry and research. Management of these wastes covers the entire range of activities right from handling, treatment, conditioning, transport, storage and disposal.
2. As a waste management philosophy, no waste in any physical form is released / disposed to the environment unless the same is cleared, exempted or excluded from regulations. A comprehensive radioactive waste management strategy is established taking into account the operational capability for the management of radioactive waste and an independent regulatory capability for its overview.
3. Nuclear waste in the form of gaseous, liquid and solid is generated during operation & maintenance activities of nuclear power plants. Gaseous waste is treated at the source of generation with technique of adsorption on suitable material, like activated charcoal

and filtration by high efficiency particulate air filter. Liquid waste is treated through techniques such as filtration, adsorption, chemical treatment, reverse osmosis etc. depending upon the nature, volume and radioactivity content. Radioactive solid wastes is segregated and volume reduced prior to its disposal. Disposal of waste is carried out in specially constructed structures. The areas of disposal structure are kept under constant surveillance to confirm effective confinement of radioactivity present in the disposed waste.

4. High level radioactive waste generated during reprocessing of spent fuel is converted into glass through a process, called vitrification. The vitrified waste is stored in a Solid Storage Surveillance Facility.
5. Till date the surveillance of the disposal areas at different Near Surface Disposal Facilities (NSDF) sites has confirmed the high degree of effectiveness of the disposal system for the containment of the disposed wastes. There has been no incident of release of radioactivity from such disposed wastes. No effect of radiation from the disposed wastes on the public or the environment has been observed.

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