

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO.5095**  
TO BE ANSWERED ON 13.08.2014

**DISPOSAL OF NUCLEAR ENERGY WASTE**

5095. SMT JAYSHREEBEN PATEL

Will the PRIME MINISTER be pleased to state:

- (a) whether adequate arrangements have been made for disposal of nuclear energy waste;
- (b) if so, the details thereof;
- (c) whether the Government reviews the background of the company and terms and conditions of the agreement entered with it for the supply of nuclear fuel; and
- (d) if so, the details thereof?

**ANSWER**

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

- (a)&(b) Yes, Sir. Safe management of nuclear waste has been accorded high priority right from the inception of our nuclear energy program.

As a waste management philosophy, no waste in any physical form is released to the environment unless the same is cleared, exempted or excluded from regulations. A comprehensive radioactive waste management is established based on safe operational experience for more than four decades, taking into account the operational capability for the management of radioactive waste and an independent regulatory over-review.

Management of nuclear 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. Utmost

emphasis is given to waste minimization, and volume reduction in the choice of processes and technologies adopted in radioactive waste management plants. Nuclear waste in the form of gaseous, liquid and solid is generated during operation & maintenance activities of nuclear power plants & radio-chemical laboratories.

- (1) Gaseous waste is treated at the source of generation. The techniques used are adsorption on activated charcoal and filtration by high efficiency particulate air filter.
  - (2) Liquid waste streams are treated by various techniques, such as filtration, adsorption, chemical treatment, evaporation, ion exchange; reverse osmosis etc., depending upon the nature, volume & radioactivity content.
  - (3) The radioactive solid wastes generated during operation and maintenance of nuclear power plants are segregated and volume reduced prior to its disposal. Disposal of waste is carried out in specially constructed structures such as reinforced concrete trenches and tile holes. Disposal system is designed based on multi barrier principle for ensuring effective containment of the radioactivity.
  - (4) High level and alpha contaminated liquid waste from spent fuel processing and other radio metallurgical operations are immobilized in a suitable matrix (vitrification) and stored in an interim storage facility for initial cooling and surveillance prior to their eventual emplacement in geological disposal facility.
- (c)&(d) The Government of India has been procuring nuclear fuel and uranium supplies from some of the leading suppliers of nuclear fuel and/or uranium in the world. Before concluding agreement for supply of nuclear fuel, Government of India finalises the terms and conditions of the supply with due consideration of techno-commercial and legal angles.