

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO.1532**  
TO BE ANSWERED ON 10.02.2021

**RADIOACTIVE WASTE**

1532. SHRI CHANDRA PRAKASH JOSHI:  
SHRI MANOJ TIWARI:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government has any plans with regard to using residue of radioactive material for various welfare purposes after their use in nuclear power; and
- (b) if so, the details of the sectors and the regions in which such works have been carried out by the Government?

**ANSWER**

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

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- (a) Yes, Sir. 'Recycle and Reuse' is being practiced at each stage of nuclear fuel cycle for optimal utilization of nuclear energy for societal benefit. India has adopted "closed fuel cycle", where spent nuclear fuel is regarded as a material of resource. Closed fuel cycle aims at reprocessing of spent fuel for recovery of Uranium and Plutonium utilised as a fuel for Nuclear Reactors. This finally leads to a very small percentage of residual material present in spent nuclear fuel requiring their management as radioactive waste. Such residue of radioactive material contains various useful radioisotopes such as Caesium-137, Strontium-90, Ruthenium-106 etc.
- (b) Caesium-137, Strontium-90, Ruthenium-106 are deployed in healthcare sector. Caesium-137, a prominent fission product, has been deployed in a non-dispersive form for first time in India. These are not region specific and used all over India, depending upon need arises.  
  
Strontium-90 has been deployed for generation of Yttrium-90, which is used for radiotherapy.  
  
Ruthenium-106 has also been extracted employing a series of highly selective separation techniques. 'Ru-106 containing silver plaques' have been successfully fabricated & deployed for eye-cancer treatment as a cost effective import substitute.

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