

**GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:3419

ANSWERED ON:25.04.2012

NUCLEAR WASTE

Bajirao Shri Patil Padamsinha ;Semmalai Shri S. ;Sukur Shri Jadhav Baliram

Will the Minister of ATOMIC ENERGY be pleased to state:

- (a) whether under the existing practice, nuclear waste is being kept in borosilicate glass containers;
- (b) if so, whether in a departure from the existing practice, the Department of Atomic Energy proposes to bury it underground;
- (c) if so, the details thereof and whether this arrangement will require lot of space for burying;
- (d) If so, the details thereof and the arrangements made by the Government in this regard; and
- (e) whether the Government has any proposal to set up underground laboratories to study the effects and desirability of storing nuclear waste in deep underground sites and if so, the details thereof?

Answer

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) No, Sir. Under the existing practice, waste is not kept in borosilicate glass container. Rather, a three stage approach is followed in our country in line with the practice followed world over for management of high level waste. These steps are:

(1) Waste is first converted into an inert solid material in the form of sodium borosilicate glass.

(2) As a second step, the above solidified waste is stored under surveillance in an air-cooled engineered facility for a period of 25-30 years to facilitate dissipation of heat generated due to decay of radioactivity.

(3) Finally, it is planned to dispose the solidified waste to a deep geological repository at a depth of about 800-1000 meters to isolate the radioactivity from the environment.

(b) There is no departure from the existing practice. Isolation of radioactivity from bio-sphere is ascertained by adopting the above mentioned three step approach.

(c) No Sir. Geological repository would not require lot of space.

(d) The need of repository would arise only after 30-40 years. This is because the inventory of radioactive waste generated is very small for the current nuclear power program of the country and present interim storage facility is adequate for the above period. Research activities for the development of geological repository have been undertaken. Presently, work related to host rock characterization with a view to develop comprehensive data bases are in progress.

(e) Yes Sir. The Department of Atomic Energy (DAE) has a proposal to construct an Underground Research Laboratory during the XII Five Year Plan. The proposed laboratory will be of generic nature. Such laboratories are used for development of methodology and technology related to emplacement of solidified waste in the repository. Experiments in such laboratories will form a basis for the development and construction of underground geological repository for storing high level nuclear waste in the future.