

**GOVERNMENT OF INDIA  
ATOMIC ENERGY  
LOK SABHA**

UNSTARRED QUESTION NO:2437

ANSWERED ON:28.03.2012

USE OF URANIUM

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**Will the Minister of ATOMIC ENERGY be pleased to state:**

- (a) whether a scheme to use slightly enriched uranium in power generating projects has been formulated recently;
- (b) if so, the facts in this regard;
- (c) whether assessment of all benefits from its use has been made;
- (d) if so, the likely benefits therefrom;
- (e) the time by which the complete assessment of the success of this test is likely to be made; and
- (f) the action plan of the Government for protecting environment in the wake of uranium mining in the country?

**Answer**

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

(a) & (b) The indigenous Pressurised Heavy Water Reactors (PHWRs) are fuelled by natural uranium containing 0.7% U-235 while the Light Water Reactors (LWRs) to be set up in technical cooperation with foreign countries would use Low Enriched Uranium (LEU) about 4%-5% U-235. The fissile uranium content (U-235) is slightly higher about 1% [Slightly Enriched Uranium (SEU)] in the spent fuel of LWRs. The nuclear power expansion plan in medium term envisages setting up of 40,000 MW of LWR capacity in the country with foreign technical cooperation. The spent fuel from these LWRs can be reprocessed and the SEU thus obtained can be used in PHWRs as fuel. With a view to use this SEU from LWR spent fuel in PHWRs which is likely to be available in future, SEU based fuel has been developed for conducting tests in operating 220 MW PHWR reactors to assess its performance. The trial irradiation of SEU fuel has been taken up in Madras Atomic Power Station (MAPS), Kalpakkam in Tamil Nadu.

(c) & (d) With the use of SEU fuel for operating PHWRs, the LWR spent fuel can be reused and LWR spent fuel inventory reduced. With increased burn up of SEU fuel in PHWRs, the requirement of fuel and the overall fuel cycle cost will be reduced. These are the advantages of use of SEU in PHWRs from LWR spent fuel.

(e) The trial irradiation and further examination of Slightly Enriched Uranium (SEU) fuel will take about one and half years from now. However, actual implementation of use of Slightly Enriched Uranium (SEU) in operating units would depend upon availability of SEU from Light Water Reactors(LWRs).

(f) Uranium mining in the country is carried out by Uranium Corporation of India Limited (UCIL), a PSU under administrative control of Department of Atomic Energy, Govt. of India. All mining operations are carried out under well-established regulatory frame-work approved and monitored by Ministry of Environment & Forests, State Pollution Control Boards, Atomic Energy Regulatory Board and Directorate General of Mines Safety. Prior to start of construction of mines, an Environmental Impact Assessment and Environmental Management Plan (EIA/EMP) is drawn up after detailed discussion as approved by the State Pollution Control Boards and Ministry of Environment and Forests, Govt. of India. Action Plans spelt out in the Environmental Management Plan (EMP) are monitored by UCIL's own Environmental Cell besides Environmental Survey Laboratories (ESLs) of Bhabha Atomic Research Centre (BARC) set up at all the sites of mining. These laboratories start functioning before commencement of operations in the mine to collect baseline data. Environmental data are collected throughout the operating phase of the mine. The data pertain to radioactivity in air, water, soil and food items. It is ensured that the regulatory limits prescribed by the Atomic Energy Regulatory Board are complied with.