

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1921
TO BE ANSWERED ON 05.08.2021

THORIUM AS FUTURE FUEL FOR NUCLEAR REACTORS

1921. Dr. Subramanian Swamy:

Will the PRIME MINISTER be pleased to state:

- (a) whether it is a fact that enriched Thorium could be the future fuel for nuclear reactors;
- (b) whether any research is being undertaken in this sphere; and
- (c) the exact details thereof?

ANSWER

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

(a) Thorium has to be converted to Uranium-233 in a reactor before it can be used as fuel.

(b)&(c) Bhabha Atomic Research Centre (BARC) and other research organisations attached with DAE, are engaged in various R&D activities to address the utilisation of Thorium in different types of reactors.

The irradiated thoria pins of research reactors have been reprocessed to obtain Uranium 233. The recovered Uranium-233 has been fabricated as fuel for the 30 kW (thermal) KAMINI reactor, which is in operation at Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam.

Technologies for fabrication of Thoria based fuel pellets, carrying Uranium-233, have been established.

Bhabha Atomic Research Centre, Mumbai has designed Advanced Heavy Water Reactor (AHWR, 300 MWe). This 300 MWe reactor using thorium based fuel will serve as a technology demonstrator not only for the thorium fuel cycle technologies, but also for several advanced passive safety features.
