constituted by the Atomic Energy Regulatory Board (AERB) and Bhabha Atomic Research Centre (BARC) which are evaluating the safety of nuclear power reactors. Their recommendations and that of other International studies will also be appropriately implemented.

(d) India is not rich in energy resources and no single source can meet the growing energy/electricity requirements of the country. Therefore all energy options need to be deployed, including nuclear resource. Nuclear power is an important carbon emission free clean energy option for meeting India's future demand and will be pursued, with enhanced emphasis on safety.

Building nuclear reactor by BHEL

†473. SHRI RAMCHANDRA PRASAD SINGH:
SHRI RAM JETHMALANI:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that a public sector heavy industries company Bharat Heavy Electricals Ltd. has acquired the competence to build nuclear reactors with indigenous resources;

(b) if so, the details thereof;

(e) whether Indigenously built reactors are inferior to foreign built reactors; and

(d) if so, the details thereof and the annual reactor building capacity currently available in the country?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY): (a) and (b) Bharat Heavy Electricals Limited (BHEL) has the competence for manufacture and supply major components like turbo generators, steam generators, pumps, switch gears etc. required for nuclear power plants. They do not have the capacity for building a full nuclear power plant.

(c) India has mastered the complete technology of building and operating Pressurised Heavy Wafer Reactors (PHWRs). 18 such reactors (220 MWe and 540 MWe in capacity) are currently under operation and 4 more PHWRs of 700 MWe capacity are under construction. These reactors are in no way inferior to PHWRs built elsewhere. The Indigenously built nuclear power reactors employ the latest State of Art safety features and systems. The safety, operational and economic performance of indigenous nuclear power reactors has been excellent and demonstrated at par with international bench marks.

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†Original notice of the question was received in Hindi.

(d) Indian Industry is currently having a capacity to build two 700 MWe reactors annually.

Deposits of thorium in country

†474. SHRI RAVI SHANKAR PRASAD:

SHRI RAM JETHMALANI:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that rich deposits of thorium have been found in the country;

(b) if so, the total quantity of thorium presently available in the country and the power generation capacity that the processing of it could yield; and

(c) whether the technology required for generating power using thorium has been developed in the country and if so, the details thereof?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY): (a) Yes, Sir.

(b) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent Unit of the Department of Atomic Energy has established 10.70 million tonnes of Monazite in the country, which contains 9,63,000 tonnes of Thorium Oxide (ThO_2). Indian Monazite contains about 9-10% of ThO_2 and about 8,46,477 tonnes of Thorium Metal can be obtained from 9,63,000 tonnes of ThO_2 which will be used for future programmes of DAE.

India is pursuing a three stage nuclear power generation programme aimed at long term energy independence based on use of our abundant Thorium resources. The programme is to use Thorium for electricity generation in the long-term. In order to realize this goal, we are well into the first stage based on our modest domestic Uranium resources. This will be followed by second stage comprising of fast reactors which can support a large power generation capacity before getting into the third stage.

Thorium being a fertile material cannot produce fission energy unless it is converted to Uranium 233. Most effective conversion of thorium to Uranium 233 can be done in fast reactors several of which will be set up in the second stage of Indian nuclear programme. A comprehensive three-stage nuclear power programme is therefore being implemented sequentially.

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†Original notice of the question was received in Hindi.