

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO.3256**  
TO BE ANSWERED ON 09.12.2010

**FBR INSTALLED AT KALPAKKAM**

3256. SHRI RAJEEV CHANDRASEKHAR

will the PRIME MINISTER be pleased to state:

- (a) whether the Commissioning of India's first Fast Breeder Reactor (FBR) being erected at Kalpakkam near Chennai in Tamil Nadu for commercial energy generation is running behind schedule and is likely to be delayed by two years;
- (b) if so, the reasons for delay;
- (c) the details of the project; and
- (d) the extent to which the power generation is likely to get a boost?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):

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- (a) Yes, Sir.
- (b)&(c) The first commercial Fast Breeder Reactor being built in India is an advanced technology reactor built by indigenous resources. Fast Breeder Reactor Technology (FBR) is a new technology, different from Pressurized Heavy Water Reactor (PHWR) for which substantial experience has been gained in India. Before launching the Prototype Fast Breeder Reactor (PFBR) project, technology development was done. However, industries faced few new scaling up technological issues when the reactor equipment manufacture was taken up. Due to this the industries required additional time for manufacture of components. Further when the raft construction was in progress, Tsunami struck the site. This resulted in additional time for rehabilitation activities.
- (d) On commissioning of FBR, the power generation is likely to get a boost by 500 MW.

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**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 3257**

TO BE ANSWERED ON 09.12.2010

**PROJECT FOR NUCLEAR POWER GENERATION**

3257. SHRI K.N. BALAGOPAL.

will the PRIME MINISTER be pleased to state:

- (a) whether new projects of nuclear power generation have been finalized during the last financial year;
- (b) if so, the details thereof;
- (c) whether public sector companies are engaged in this sector;
- (d) whether private sector have entered into the nuclear power sector; and
- (e) if so, the details thereof and the expected capacity of generation?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):

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- (a)&(b) Yes, Sir. Kakrapar Atomic Power Project 3&4 (KAPP 3&4-2 x 700 MW) and Rajasthan Atomic Power Project 7&8 (RAPP 7&8-2 x 700 MW) were accorded administrative approval and financial sanction during the last financial year. The work on these projects has started and is expected to be completed progressively by 2017.
- (c) Nuclear Power Corporation of India Limited (NPCIL), a Public Sector Undertaking under the Department of Atomic Energy is responsible for setting up these projects.
- (d) No, Sir. The contribution of the private sector at present is only in terms of supply of equipment / components / services for setting up these projects.
- (e) On completion of these projects, 2800 MW will be added to nuclear power capacity of 7280 MW in operation / under construction.

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**RAJYA SABHA**  
**UNSTARRED QUESTION NO.3258**  
TO BE ANSWERED ON 09.12.2010

**ESTABLISHMENT OF NUCLEAR POWER EDUCATION INSTITUTE**

3258. SHRI PARSHOTTAM KODABHAI RUPALA:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Department of Atomic Energy (DAE) has received any representation for establishing Nuclear Power Education Institute to provide trained and skilled man power;
- (b) if so, the further action taken by DAE;
- (c) whether DAE has conduct any specific study, in case of any nuclear eventualities in Gujarat State;
- (d) in what manner its adverse effect should be minimize and in what way affected person would get best medical treatment urgently in such cases; and
- (e) by when DAE intends to set up nuclear power station near Bhavnagar of Gujarat State?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):

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(a) & (b) No Sir. However “Homi Bhabha National Institute(HBNI)”, having the status of a deemed to be university under the UGC Act, has already been set up. Academic programs of the following ten constituents institutions of Department of Atomic Energy (DAE) come under the ambit of HBNI :

- 1) Bhabha Atomic Research Centre
- 2) Indira Gandhi Centre for Atomic Research
- 3) Raja Ramanna Centre for Advanced Technology
- 4) Variable Energy Cyclotron Centre
- 5) Tata Memorial Centre
- 6) Institute for Plasma Research
- 7) Institute of Physics
- 8) Institute of Mathematical Sciences
- 9) Harish Chandra Research Institute
- 10) Saha Institute of Nuclear Physics

Headquarters of HBNI is in Mumbai. Objectives of HBNI are :

- i) To encourage pursuit of excellence in sciences (including engineering sciences) and mathematics in a manner that has major significance for the progress of indigenous nuclear technological capability.
- ii) To provide an academic framework for integrating basic research being done at the grant-in-aid institutions and the research centres of DAE with technology development at the research centres. The institutions of DAE participating in the programmes of HBNI will be its Constituent Institutions.
- iii) To encourage inter-disciplinary research carried out within an institution or inter-institutionally, which has been the hall mark of the research & development programmes of the Constituent Institutions.
- iv) To nurture an environment for attracting high quality manpower in sciences including engineering sciences for taking up a career in nuclear science and technology and related areas in the Department of Atomic Energy or elsewhere. The institute also provides a framework for enabling the employees of the DAE for sharpening and updating their knowledge base while in service.

(c) & (d) Gujarat state has Nuclear Power Station at Kakrapara, where two units of 220 Mwe Pressurised Heavy Water Reactors are currently in operation. In addition to this, construction of two 700 MW PHWRs has begun recently at the site. Before the setting up and commissioning of any nuclear power plant / nuclear facility, Department of Atomic Energy always carries out exhaustive studies on 'Site selection criteria fulfillment', impact of the nuclear facilities on the environment during normal operation as well as during any unlikely worst accident scenario. Defense-in-depth approach is followed in the design of all nuclear power plants to ensure that major nuclear accident having any impact on environment/ public is highly unlikely. In addition, to meet any unlikely eventuality, the emergency preparedness plans are prepared and approved by competent authority prior to the commissioning of the plant. Emergency exercises are carried out at regular intervals to assess the efficacy of these plans. In case any deficiency is noticed during exercises, the plans are modified accordingly. All such studies required to meet the above goals have been / are being carried out for the Kakrapara Power Station also.

Design safety features ensure that even in the worst conceivable case of accident, there is no possibility of any radiation injuries in the public domain. Nevertheless, the emergency preparedness including medical management is in place even prior to the commissioning of the plant.

In the event of an accident, medical treatment to affected persons can be given at all the tertiary care institutions in the State which have facilities for giving blood component therapy (blood and platelets) as well as facilities for isolation of such cases to prevent infections till bone marrow recovery take place. The medical management depends on the quantity of the dose received and protocols are available as a part of the radiation medical emergency management plan.

- (e) The Government of India has accorded 'In-principle' approval of the site at Chhaya Mithi Viridi, Bhavnagar District in Gujarat for setting up of 8 x 1000 MW nuclear power reactors. Currently, the pre-project activities at the site are in progress. The plan is to commence work at the site towards end of XI Five Year Plan or beginning of XII Five Year Plan.

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**UNSTARRED QUESTION NO.3259**  
TO BE ANSWERED ON 09.12.2010

**DISCUSSION OF RAILWAYS AND NPCIL OVER NUCLEAR PLANT**

3259. SHRI M.V. MYSURA REDDY

will the PRIME MINISTER be pleased to state:

- (a) whether it is a fact that Railways are discussing with the Nuclear Power Corporation of India Limited (NPCIL) for setting up of a nuclear power plant of 1000 MW capacity on its behalf;
- (b) if so, the details thereof;
- (c) the estimated cost of the project; and
- (d) the place where project is going to be installed?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS  
(SHRI V NARAYANASAMY):

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- (a)to(d) Yes, Sir. Indian Railways and NPCIL had preliminary discussions about possibility of setting up a nuclear power project. However, no concrete proposal has emerged.

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**RAJYA SABHA**  
**UNSTARRED QUESTION NO.3260**  
TO BE ANSWERED ON 09.12.2010

**URANIUM DISCOVERED IN RAJASTHAN**

3260. SHRIMATI MAYA SINGH

will the PRIME MINISTER be pleased to state:

- (a) the names of regions in Rajasthan from where uranium reserves have been discovered during the last three years and the quantum of uranium that has been made fit for use for various activities;
- (b) whether the Ministry is working on any proposal of new nuclear power houses in view of uranium obtained from Rajasthan;
- (c) if so, the outline thereof; and
- (d) the power agreement of Rajasthan's share from Rajasthan based Centrally sponsored Atomic Power Stations and the quantum of electricity to be given to rest of the States from the electricity produced from power units in Rajasthan?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS  
(SHRI V NARAYANASAMY):

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- (a) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of the Department of Atomic Energy is engaged in exploration and survey of uranium resources in the country. During the last three years, AMD has carried out sub-surface exploration through drilling at Rohil, Sikar District, Rajasthan which has resulted in addition of about 1,992 tonnes of uranium oxide.
- (b)&(c) The setting of Nuclear Power Stations is not linked to the location of Uranium Mines. The Govt. of India has accorded approval for setting up of Rajasthan Atomic Power Project Units 7 & 8 ( 2 x 700 MW) Pressurized Heavy Water Reactors (PHWRs) in October, 2009 at Rawatbhata site where there are six Nuclear Power Reactors with an installed capacity of 1180 MW already in operation.
- (d) The allocation of power to the Rajasthan State from the Nuclear Power Plants located at Rajasthan is, 100% from RAPS-2 (200 MW), 35.97% from RAPS - 3 & 4 (440 MW) and 21.78% from RAPS - 5&6 (440 MW). The remaining power is allocated to other states of the Northern Electricity Region, Chandigarh, Delhi, Jammu & Kashmir, Haryana, Himachal Pradesh, Punjab, Uttar Pradesh and Uttarakhand.

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GOVERNMENT OF INDIA  
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**UNSTARRED QUESTION NO.3261**  
TO BE ANSWERED ON 09.12.2010

**SETTING UP OF FAST BREEDER NUCLEAR ERACTOR**

3261. SHRI BHAGAT SINGH KOSHYARI

will the PRIME MINISTER be pleased to state:

- (a) whether any agreement for setting up of fast breeder nuclear power plants has been signed during the visit of US President to India;
- (b) if so, the details thereof, location-wise;
- (c) the kind of support proposed to be provided by the United States of America; and
- (d) by when these plants would be functional?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):

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- (a) No, Sir.
- (b)to(d) Do not arise.

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GOVERNMENT OF INDIA  
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**UNSTARRED QUESTION NO.3262**  
TO BE ANSWERED ON 09.12.2010

**URANIUM MINES OPERATING IN COUNTRY**

3262 SHRI MANGALA KISAN:

Will the PRIME MINISTER be pleased to state:

- (a) the details of uranium mines operating in the country and the average quantum of uranium produced every year, and the quality obtained, State-wise;
- (b) the details of uranium and thorium mines which are found by Atomic Minerals Directorate and yet to come under operation, State-wise, as on today;
- (c) the average quantum of uranium and thorium expected in a year out of all newly found uranium and thorium mines, site-wise and State-wise; and
- (d) the details of budget released exclusively towards scientific research and survey towards finding uranium and thorium mines during the period 2007-08, 2008-09 and 2009-10?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS  
(SHRI V NARAYANASAMY):

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- (a) The Uranium Corporation of India Limited (UCIL), a Public Sector Undertaking under the Department of Atomic Energy (DAE) is presently operating five underground mines at Jaduguda, Bhatin, Narwapahar, Turamdih and Bagjata and one opencast mine at Bandhuhurang, all in East Singhbhum District of Jharkhand State. It is not in the public interest to disclose the quantity of production of uranium.
- (b) The details of projects which are yet to come under operation are
  - i. Uranium mine at Tummalapalle, Kadappa District, Andhra Pradesh
  - ii. Lambapur uranium project at Lambapur, Nalgonda District, Andhra Pradesh
  - iii. Uranium mine at Gogi in Gulbarga District, Karnataka.
  - iv. Kyelleng Pyndengsohiong Mawathabah Project in West Khasi Hills District, Meghalaya. However, this project has not been taken up by UCIL for want of approval from Government of India.

Atomic Minerals Directorate for Exploration and Research(AMD), a Constituent unit of DAE has established 5.18 million tonnes of monazite in the following states, which are yet to come under operation:-

State	Monazite ( in million tonnes)
Andhra Pradesh	3.74
West Bengal	1.22
Bihar	0.22
<b>Total</b>	<b>5.18</b>

Indian Rare Earths Limited (IREL) a public sector Undertaking under DAE has been producing monazite, a mineral containing thorium from its mining and mineral separation plants located at Chavara, Kerala; Manavalakurichi, Tamilnadu; and Orissa Sand Complex, Orissa. Indian Monazite on an average contains about 9-10% of Thorium Oxide.

- (c) It is not in the public interest to disclose the quantity of production of uranium.
- (d) Details of budget released are:

Year	Research & Development Sector	Industries & Minerals Sector
2007-2008	₹ 39.00 crore	₹ 18.00 crore
2008-2009	₹ 50.00 crore	₹ 45.00 crore
2009-2010	₹ 70.00 crore	₹ 40.00 crore

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**UNSTARRED QUESTION NO.3263**  
TO BE ANSWERED ON 09.12.2010

**COOPERATION FOR PEACEFUL USE OF NUCLEAR ENERGY**

3263. SHRI SITARAM YECHURY:

will the PRIME MINISTER be pleased to state:

- (a) whether in the Agreement for Cooperation between India and America regarding Peaceful uses of Nuclear Energy, in Article 6 (iii) it is stipulated that "India would establish a new national reprocessing facility dedicated to reprocessing safeguarded nuclear materials under IAEA safeguards";
- (b) whether the reprocessing of all materials under IAEA safeguards be done in a single reprocessing facility;
- (c) if so, the location of such facility;
- (d) whether the reprocessing of the spent fuel of the Jaitapur Nuclear Power Project would be performed in the national reprocessing facility mentioned in para (a); and
- (e) if not, the details thereof?

**ANSWER**

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS  
(SHRI V NARAYANASAMY):

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(a)to(c) Yes Sir. Article 6(iii) of the Agreement for cooperation between the Government of India and the Government of the United States of America concerning peaceful uses of nuclear energy, inter-alia, states that India agreed to establish a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards. The Agreement on arrangements and procedures in this regard has entered into force on 21 September, 2010.

As per the Arrangements and Procedure Agreement, the reprocessing may take place in India at two new national reprocessing facilities dedicated to reprocessing safeguarded nuclear material under International Atomic Energy Agency (IAEA) safeguards, including future expansion, modifications, renovations or additions thereto. The Arrangements & Procedures would also apply to any additional new national facilities established pursuant to this Agreement. No decision has been taken on the location of such facilities.

(d)&(e) Reprocessing of spent fuel coming out of any IAEA safeguarded plant will be done in safeguarded Reprocessing plants. As yet, no decision has been taken regarding reprocessing of spent fuel of Jaitapur Nuclear Power Project.

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