

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 316**  
TO BE ANSWERED ON 10.11.2010

**NUCLEAR POWER EDUCATION INSTITUTE**

316. SHRIMATI DARSHANA JARDOSH:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government proposes to set up Nuclear Power Education Institute to train the scientists and others in the field of nuclear power generation;
- (b) if so, the location and objectives of the institute;
- (c) whether the scientists will also be trained to handle any eventualities in case of nuclear disaster in this institute; and
- (d) if so, the details thereof?

**ANSWER**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.  
(SHRI PRITHVIRAJ CHAVAN):

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(a)& (b) 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 constituent 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 are 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) Disaster Management comes under the purview of National Disaster Management Authority. However, training in nuclear security is an important element of training to be provided to those who have to manage disasters. To provide training for this purpose, a Global Center for Nuclear Energy Partnership is proposed to be set up in Haryana near New Delhi. This center will have four schools and one of the schools will be devoted to Nuclear Security.

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**LOK SABHA**  
**UNSTARRED QUESTION NO. 323**  
TO BE ANSWERED ON 10.11.2010

**DEVELOPMENT OF SEED VARIETIES USING RADIATION TECHNIQUES**

323. SHRI JAGADANAND SINGH:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government has fixed any fresh target for the agricultural production by using radiation technology in next two years;
- (b) if so, the details thereof;
- (c) the details of seed varieties developed through radiation technique during last one year;
- (d) whether the Government proposes to use radiation technology for preservation of food articles; and
- (e) if so, the details thereof?

**ANSWER**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.  
(SHRI PRITHVIRAJ CHAVAN):

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- (a) to (e) The Department of Atomic Energy does not fix any target for increasing agriculture production using radiation technology. However, it has been carrying out extensive research in developing new mutant crop varieties, especially oil seeds and pulses. 39 crop varieties developed at Bhabha Atomic Research Centre (BARC) were released for the use of farmers through various agricultural universities in the country. BARC on an average every year releases 2 to 3 new varieties of crop for commercial cultivation at national level. BARC has also developed technology for preservation of food, such as spices, onion, potato, rice, mangoes, etc., by radiation processing. It has two plants, one at Navi Mumbai and the other at Lasalgaon, near Nasik, Maharashtra. A breakthrough has been achieved in demonstrating commercial feasibility of radiation technology in overcoming quarantine barrier to international trade and obtaining market access. The export of radiation processed mangoes to US began in 2008. The success in this area has resulted in the Department of Atomic Energy signing more than 24 MoUs with entrepreneurs for setting up radiation processing facilities in private and cooperative sectors.

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**UNSTARRED QUESTION NO. 333**  
TO BE ANSWERED ON 10.11.2010

**ENVIRONMENT CLEARANCE TO NUCLEAR POWER PLANTS**

333. KUMARI SAROJ PANDEY:

Will the PRIME MINISTER be pleased to state:

- (a) the details of nuclear power plants for which environmental clearance is pending;
- (b) whether the non-clearance of these projects have led to cost escalation of these plants; and
- (c) if so, the steps taken/proposed to be taken for early clearance of the plants from environment and forest clearance?

**ANSWER**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.  
(SHRI PRITHVIRAJ CHAVAN):

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- (a) Environmental clearance is pending for the Jaitapur Nuclear Power Project in Ratnagiri district of Maharashtra.
- (b) No, Sir. Statutory clearances including those from Ministry of Environment and Forests (MoEF) are a pre-requisite for finalizing the Detailed Project Report, including cost, for approval of the project by the Government.
- (c) Nuclear Power Corporation of India Limited (NPCIL) is actively engaged with all the stakeholders to address their concerns so that early clearance can be obtained.

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**UNSTARRED QUESTION NO. 374**  
TO BE ANSWERED ON 10.11.2010

**IMPORT OF NUCLEAR FUEL**

374. DR. SANJAY JAISWAL:

Will the PRIME MINISTER be pleased to state:

- (a) whether there is shortage of fuel for atomic reactors in the country;
- (b) if so, the details thereof and the reasons therefor;
- (c) the quantity of uranium imported from various countries and expenditure incurred thereon during the last three years and the current year, country-wise and year-wise;
- (d) whether the Government has any scheme to make the country self-reliant in atomic fuel; and
- (e) if so, the time by when it is to be done?

**ANSWER**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.

(SHRI PRITHVIRAJ CHAVAN):

- (a)&(b) There are nineteen reactors (4560 MW) of which one reactor RAPS-1 (100 MW) is under long term shutdown and KAPS-1 (220 MW) after completion of Renovation & Modernization, is awaiting fuel for restart. Seven reactors (1400 MW) use imported uranium which is available. The remaining ten reactors (2840 MW) use domestic uranium, which is not available in the required quantity. These are operated at reduced power levels.
- (c) Details of uranium imported from various countries and expenditure incurred thereon during the last three years and the current year are as under:

Year	Country	Quantity	Expenditure including taxes and statutory levies ( ₹ )
2007 & 2008	<b>NIL</b>		
2009	France	300 MT of Uranium Ore Concentrates	266.08 cr.
	Russia	58 MT of enriched Uranium Dioxide Pellets	352.70 cr.
		120 MT Natural Uranium Dioxide Pellets	223.33 cr.
2010	Russia	90 MT Natural Uranium Dioxide Pellets	137.37 cr.
	Kazakhstan	300 MT of Natural Uranium Ore Concentrate	161.88 cr.

- (d) The government is making efforts to augment domestic fuel supplies by opening new mines and processing facilities.
- (e) The shortage of domestic uranium is expected to be over progressively in about two years.

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**UNSTARRED QUESTION NO. 389**  
TO BE ANSWERED ON 10.11.2010

**INTEGRATED NUCLEAR RECYCLE FUEL**

389. SHRI P.T. THOMAS:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government proposes to set up new integrated nuclear recycle plants with facilities for both reprocessing of spent fuel and waste management;
- (b) if so, the details thereof and their locations; and
- (c) the time by when these plants are likely to be made functional?

**ANSWER**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.  
(SHRI PRITHVIRAJ CHAVAN):

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- (a) Yes Sir. Three plants are planned and design of the first plant has started.
- (b) Integrated Nuclear Recycle Plant (INRP) for Reprocessing and Waste Management in an integrated manner will be built for the first time in the country. The plant will process Spent Fuel from Pressurized Heavy Water Reactors utilizing the experience and expertise available in the Department of Atomic Energy in the design, construction and operation of separate smaller plants. The integrated plant, presently at the design stage, will be completely indigenous and will use latest technology available in India. The first INRP will be located at Tarapur for which infrastructure development work has started. Site for the other two plants are yet to be decided.
- (c) The first plant at Tarapur is expected to be functional by 2017. The remaining plants will be commissioned with a two to three years gap.

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GOVERNMENT OF INDIA  
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**UNSTARRED QUESTION NO. 448**  
TO BE ANSWERED ON 10.11.2010

**PRODUCTION OF NUCLEAR ENERGY**

448. SHRI RAMSINH RATHWA:  
DR. KIRIT PREMJBHAI SOLANKI:

Will the PRIME MINISTER be pleased to state:

- (a) the actual targets fixed and achieved during Tenth and Eleventh Five Year Plans in the production of nuclear energy;
- (b) the details of the reasons for shortfall, if any; and
- (c) the action plan drawn for increasing nuclear energy during the remaining period of current plan and next Five Year Plan?

**ANSWER**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.  
(SHRI PRITHVIRAJ CHAVAN):

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- (a) The generation of nuclear energy in the X Plan was 90,354 Million Units (MUs) as compared to a target of 82,495 MUs. The target for the XI Plan was 1,63,395 MUs, which was revised to 1,24,608 MUs at Mid-Term-Appraisal (MTA) stage. The generation in the first three years of the XI Plan has been 50,714 MUs and the expected generation in full plan period is about 1,06,000 MUs.
- (b) The targets were fixed on the assumption of availability of imported uranium for reactors under safeguards. Accessing the imported uranium through international cooperation has taken longer time. In addition there has been delay in augmentation of uranium supply from indigenous sources.
- (c) The indigenous fuel supply is now improving progressively. Full requirement for unsafeguarded reactors will be met on operation of the new uranium mine and mill in Tummalapalle in Andhra Pradesh in the year 2012. With the availability of imported uranium for the safeguarded reactors and of indigenous uranium for the unsafeguarded reactors, it is expected that nuclear power plants will operate at high plant load factors during the next five year plan.

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