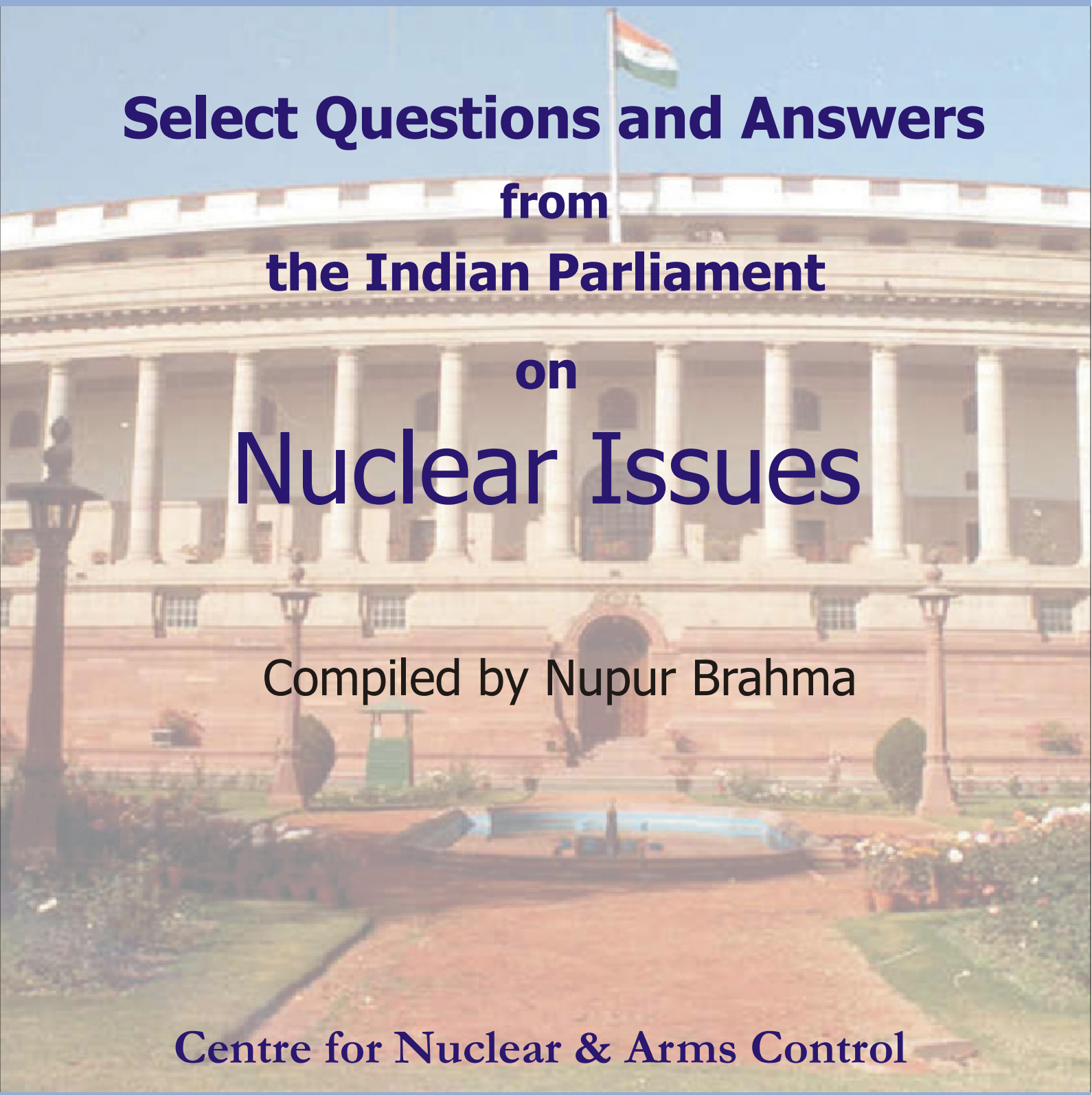
YEAR 2010



Select Questions and Answers from the Indian Parliament on Nuclear Issues

Compiled by Nupur Brahma

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3282
TO BE ANSWERED ON 09.12.2010

SHRI H.K. DUA:

NUCLEAR PLANTS BY CHINA IN PAKISTAN

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether India is aware of the reports that China has decided to build one gigawatt nuclear power plant in addition to two reactors which it has already contracted to build in Pakistan at Chasma;
(b) whether Government has tried to find out whether these nuclear power plants are within international safeguard;
(c) whether Government has got in touch with Chinese and other Governments and the IAEA in this connection; and
(d) whether China has obtained necessary exemption from Nuclear Suppliers Group (NSG)?

ANSWER
THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SMT. PRENEET KAUR)

(a) to (d) Government has seen media reports to such effect. The Chinese Foreign Office Spokesperson on 8 July 2010 said that "China and Pakistan have conducted some cooperation in nuclear energy for civilian use, which is consistent with their respective international obligations, completely for peaceful purposes and subject to IAEA safeguard and supervision". India's concerns in this regard have been clearly conveyed to the Chinese side. Government keeps a constant watch on all developments having a bearing on India's national interest and takes all necessary measures to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516871)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO.437
TO BE ANSWERED ON 09.12.2010

SHRI SATYAVRAT CHATURVEDI:

PRODUCTION OF NUCLEAR WEAPON BY PAKISTAN

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether Government has taken notice of the report of American Nuclear Monitoring Institute, 'The Institute for Science and International Security,' according to which the entire assembly line of cooling towers in Pakistan's Khushab third reactor is ready whereby Pakistan would step up plutonium production for manufacturing nuclear weapons;
(b) whether it is a fact that Pakistan has 70 to 90 nuclear weapons;
(c) whether it is also a fact that all the defence preparedness of Pakistan could be used against India; and
(d) if so, the action being taken by Government in this regard?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) to (d) The Government have seen recent report of the Institute for Science and International Security, Washington DC regarding construction of third heavy water reactor at Khushab nuclear site in Pakistan. Government continuously monitors developments having a bearing on national security and takes all necessary steps to safeguard India's security.
(http://meaindia.nic.in/mystart.php?id=100516864)

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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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 Virdi, 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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(a) No, Sir.
(b)to(d) Do not arise.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(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
Total	5.18

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

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4623
TO BE ANSWERED ON 08.12.2010

REVIEW OF ATOMIC ENERGY ACT

4623. SHRI RAJAIAH SIRICILLA:
SHRI HARISH CHANDRA CHAVAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to review the Atomic Energy Act;
(b) if so, the reasons therefor; and
(c) the steps proposed to be taken in the said matter?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (c) Yes Sir. The Government is reviewing the Atomic Energy Act, 1962 including for strengthening the Atomic Energy Regulatory Board (AERB) and for carrying out responsibilities relating to ratification of Convention on Physical Protection of Nuclear Materials (CPPNM). This is under examination in the Department.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4627
TO BE ANSWERED ON 08.12.2010

ENVIRONMENT CLEARANCE TO POWER PROJECTS

4627. SHRI RAKESH SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether Nuclear Power Corporation of India Ltd. (NPCIL) had submitted a proposal for obtaining environmental clearance of Atomic Power Projects at village Chutka in Madhya Pradesh;
(b) if so, the present status of the project; and
(c) the time by which environmental clearance is likely to be obtained?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to(c) NPCIL had submitted Terms of Reference (TOR) for Environmental Impact Assessment (EIA) of the project at village Chutka in Madhya Pradesh to the Expert Appraisal Committee of the Ministry of Environment & Forests (MoE&F). The committee has advised NPCIL to provide additional details on land use and environmental setting of site. The revised TORs are under finalization. This will be followed by EIA Report by the MoE&F accredited agency, a public hearing and detailed scrutiny by the Expert Advisory Committee before environmental clearance is accorded by MOE&F. The plan is to commence work on the project, after obtaining statutory clearances by MoE&F and Atomic Energy Regulatory Board, in the year 2012.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4649
TO BE ANSWERED ON 08.12.2010

ENVIRONMENTAL IMPACT ON NUCLEAR POWER STATION

4649. SHRIMATI SUPRIYA SULE:
SHRI SANJAY DINA PATIL:
DR. SANJEEV GANESH NAIK:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has taken note of criticism by the Scientists of Environment Law Alliance Worldwide of Environment Impact Assessment (EIA) report on proposed Nuclear Power Station at Ratnagiri;
(b) if so, the reaction of the Government thereon;
(c) whether the EIA conducted by the Government of the world's largest Nuclear Power Park coming up at Jaitapur in the Ratnagiri district of Maharashtra has been found to suffer from serious lapses;
(d) if so, the other points made in the report; and
(e) the steps taken to remove these lapses?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)to(e) The Environmental Impact Assessment of the project was conducted by National Environmental Engineering Research Institute (NEERI). In addition, Bombay Natural History Society (BNHS) have submitted a detailed bio-diversity assessment report of the region. The Central Water and Power Research Station has carried out model studies for temperature rise of the cooling water. All objections/ criticisms of the reports have been given due consideration by the Expert Appraisal Committee (EAC) of the Ministry of Environment & Forest (MoE&F) for strategic projects. MoE&F have after detailed consideration of the reports and the objections thereto have accorded Environmental Clearance for the project subject to certain conditions. This inter alia, include preparation of a comprehensive bio diversity plan, constitution of a monitoring committee, reinforcement of environmental stewardship programme of NPCIL and clearances by the Atomic Energy Regulatory Board. The conditions stipulated by MoE&F shall be adhered to.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4651
TO BE ANSWERED ON 08.12.2010

NUCLEAR POWER PLANTS

4651. SHRI KUNWAR REWATI RAMAN SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether the State Government of Uttar Pradesh has sought setting up of nuclear power plants in the State as it is facing severe power shortage;
(b) if so, the details thereof;
(c) the locations identified in U.P. for setting up of nuclear power plants; and
(d) the time by which a nuclear plant is likely to become operational?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)to(d) Two nuclear power reactors (NAPS-1&2) of 220 MW each are in operation at Narora, Uttar Pradesh (UP). In addition UP has share of power from Nuclear Power Stations RAPS units 3 to 6 in Rajasthan. The State Government has requested setting up of nuclear power project in Bundelkhand region of UP. However, proposal for a suitable site for evaluation by the Site Selection Committee is awaited. The site at Narora also has additional potential for setting up additional nuclear power capacity of 1400 MW. Decision regarding setting up new project will be taken in the 12th Five Year Plan period. The completion time of a project is about 6 years.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4760
TO BE ANSWERED ON 08.12.2010

CONVENTION ON SUPPLEMENTARY COMPENSATION

4760. SHRI RADHA MOHANSINGH:
SHRI ANANTKUMARHEGDE:
SHRI PARTAP SINGH BAJWA:
SHRI GURUDAS DASGUPTA:
SHRIMATI BOTCHA JHANSHI LAKSHMI:
SHRI MANISH TEWARI:
SHRIMATI SUPRIYA SULE:
SHRI PRABODH PANDA:
SHRI BHUDEO CHOUDHARY:
SHRI ASADUDDIN OWAISI:
SHRI JAGDISH SHARMA:
SHRI R. THAMARAISELVAN:
SHRI K.R.G. REDDY:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has signed the International Convention on Supplementary Compensation (CSC) for Nuclear Damages after the enactment of Civil Liability for Nuclear Damages Act,2010;
(b) if so, the details thereof;
(c) whether any discussion has been held with the International Atomic Energy Agency (IAEA) in this regard;
(d) if so, the details thereof;
(e) whether there is any divergence between Civil Liability for Nuclear Damages Act, 2010 and the CSC on suppliers liability;
(f) if so, the facts in this regard; and
(g) the differences and the similarities in both these documents?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (d) - Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27th October 2010. The Convention has not yet been ratified by India. Prior to signing, procedural issues were discussed with IAEA.
(e) to (g) - The basic elements of the Civil Liability for Nuclear Damages Act, 2010 are compliant with CSC. Some potential suppliers have however raised certain issues mainly relating to application of right of recourse of the operator as provided in the Act.
(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2482
TO BE ANSWERED ON 02.12.2010

SUICIDES IN NUCLEAR PLANTS

2482 SHRI P. RAJEEVE:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the number of suicides are increasing in the nuclear plants;
(b) if so, whether the Department has conducted any inquiry in this regard?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) The cases of unnatural deaths of employees of Department of Atomic Energy during the last five years were analyzed. It was seen that out of 29 death cases, 22 were alleged suicides. Only one case, among these, related to work related discontentment. All other cases of alleged suicidal deaths are on account of personal/family reasons. Sensitive cases are monitored by the Department in consultation with Intelligence Bureau and the local Police.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 2483
TO BE ANSWERED ON 02.12.2010

SIGNING OF CSC FOR NUCLEAR DAMAGE

2483. SHRI D. RAJA
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that India has signed the Convention on Supplementary Compensation (CSC) for nuclear damage; and

(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27 October 2010. The Convention has not yet been ratified by India.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2484
TO BE ANSWERED ON 02.12.2010

URANIUM RESERVES IN THE COUNTRY

2484. SHRI MANGALA KISAN
Will the PRIME MINISTER be pleased to state:
(a) the quantum of uranium reserves in the country;
(b) whether it is a fact that country is passing through uranium crisis as a result of which nuclear reactors are likely to be affected ;
(c) whether Government has conducted any survey on availability of atomic and nuclear minerals in the country; and
(d) if so, whether Government is working on a plan for production of uranium from country's reserves and their optimum utilization with a view to achieve self-reliance in the field of nuclear energy?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent Unit of the Department of Atomic Energy has established 1,49,654 tonnes of Uranium resources as on 31.10.2010.
(b) The indigenous uranium is presently not available in the required quantity as a result of which nuclear power reactors fuelled by indigenous uranium are being operated at about 70% of their rated power.
(c) Yes, Sir.
(d) Yes, Sir.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2485
TO BE ANSWERED ON 02.12.2010

NUCLEAR ENERGY PLANTS IN ANDHRA PRADESH

2485 SHRI M.V. MYSURA REDDY
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that Government is planning to start two nuclear energy plants in Andhra Pradesh;
(b) if so, the details thereof;
(c) the estimated investment required for the above two plants;
(d) whether the State Government of Andhra Pradesh has given its consent for the above plants;
(e) if not, the reasons therefor; and
(f) the plan of action to pool the resources and execute the above projects in the State?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) The central government has accorded 'in principle' approval for the site at Kovvada in Srikakulam district of Andhra Pradesh for locating six units of 1000 MW each, to be set up in technical cooperation with the USA. The first phase consists of two units.
(c) The estimates of investments would emerge after the discussions with the Companies of the USA are concluded.
(d) The government of Andhra Pradesh had offered the site at Kovvada for setting up nuclear power plants which has been approved. The pre project activities including land acquisition in co-operation with state government have commenced.
(e) Does not arise.
(f) The nuclear power project at Kovvada is a central sector project to be executed by Nuclear Power Corporation of India Limited, a PSU of Department of Atomic Energy. The investment will be met through combination of external credit/market borrowings and equity.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2486
TO BE ANSWERED ON 02.12.2010

ATOMIC POWER PLANTS IN RAJASTHAN

2486. SHRI ASHK ALI TAK:
Will the PRIME MINISTER be pleased to state:
(a) the number of atomic energy power stations to be set up in Rajasthan alongwith the location thereof;
(b) whether the proposal to increase the power generation capacity of power station Rawatbhata, Kota is under consideration of Government ; and
(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)to(c) Presently six nuclear power reactors (RAPS 1 to 6) with a total installed capacity of 1180 MW are in operation at Rawatbhata in Rajasthan. The Central Government had accorded financial sanction for two more nuclear power reactors of 700 MW capacity each, to be set up at the same site. The project has been launched and excavation is in progress. On completion of the project in the year 2016-17, the station capacity will increase to 2580 MW.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2487
TO BE ANSWERED ON 02.12.2010

CLOSING DOWN OF UNITS OF NPCIL

2487. SHRI R.C. SINGH:
Will the PRIME MINISTER be pleased to state:
(a) the reasons that Nuclear Power Corporation of India Limited (NPCIL) decided to close down two units of Tarapur; and
(b) total production from the units of Tarapur, unit-wise?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) All the four units of Tarapur Atomic Power Station are in operation and no decision is taken to close them.
(b) The generation of electricity from TAPS 1 to 4 in the year 2009-10 and 2010-11 (upto October 2010), unit-wise is as follows :-

Unit	Generation in Million Units	
	2009-10	2010-11 (upto Oct.)
TAPS-1	1199	686
TAPS-2	1251	812
TAPS-3	2787	1743
TAPS-4	2754	1632

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2488
TO BE ANSWERED ON 02.12.2010

ATTITUDE OF US TOWARDS NUCLEAR LIABILITY BILL

2488. SHRI TARUN VIJAY
Will the PRIME MINISTER be pleased to state the attitude of US Government towards Nuclear Liability Bill specially in the wake of their open objection to the Bill's clause 17(B)?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
Some potential suppliers have raised certain issues mainly relating to application of right of recourse of the operator, as provided in section 17 (b) of the Civil Liability for Nuclear Damage Act, 2010. In the November 8, 2010 Joint Statement of Hon'ble Prime Minister Dr. Manmohan Singh and US President Barack Obama, the two leaders noted both countries had enacted domestic legislations and were also signatories to the Convention on Supplementary Compensation (CSC). They further noted that India intends to ratify the CSC within the coming year and is committed to ensuring a level playing field for US companies seeking to enter the Indian nuclear energy sector, consistent with India's national and international legal obligations.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2562
TO BE ANSWERED ON 02.12.2010

PRIVATE SECTOR IN NUCLEAR POWER SECTOR

2562. SHRI KALRAJ MISHRA
Will the PRIME MINISTER be pleased to state:
(a) whether organisation like Federation of India Chamber of Commerce and Industries (FICCI) and Confederation of Indian Industry (CII) has come out with a strong plea for allowing private companies in nuclear power sector;

(b) if so, the precise submission proposal and projects made out to help them; and

(c) the decision taken by Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Federation of Indian Chambers of Commerce and Industry (FICCI) in its Working Group Report on Civil Nuclear Energy (2009), inter-alia, suggested certain amendments to the Atomic Energy Act, 1962 to enable private sector participation.
(c) For the present, participation of Indian private sector in nuclear power generation projects will continue to be guided by the existing provisions of the Atomic Energy Act, 1962.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. *317
TO BE ANSWERED ON 01.12.2010

NUCLEAR POWER PLANTS

*317. SHRI KAMLESH PASWAN:
SHRI SYED SHAHNAWAZ HUSSAIN:
Will the PRIME MINISTER be pleased to state:
(a) whether India is still dependent upon foreign countries for setting up of nuclear power plants, their operation, nuclear feed stock, etc.;
(b) if so, the reaction of the Government thereto;
(c) the percentage of foreign components used in the construction of nuclear power plants;
(d) the steps taken/proposed to be taken to use indigenous technology and local components in building the nuclear power plants in the country; and
(e) the time by which the country is likely to be self-reliant in the matter of nuclear power?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to(e) A statement is laid on the table of the House:
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STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. *317 FOR ANSWER ON 01.02.2010 BY SHRI KAMALESH PASWAN AND SHRI SYED SHAHNAWAZ HUSSAIN REGARDING NUCLEAR POWER PLANTS.

(a) & (b) No Sir. India is not dependent on foreign countries for setting up and operation of pressurised heavy water (PHWR) type nuclear power plants.
(c) to (e) There is very limited foreign components in PHWR plants (220 MW to 700 MW capacity).
For a rapid growth in the nuclear power capacity, Nuclear Power Corporation of India Limited (NPCIL) is taking steps to install large size (1000 MW and higher) nuclear power plants in technical cooperation with a few foreign vendors. These plants will be in addition to the installation of several indigenous PHWR units.
India is already self reliant in PHWR technology and its fuel cycle.

(http://www.dae.nic.in/writereaddata/lssq011210_317.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3457
TO BE ANSWERED ON 01.12.2010

EXPANSION OF IPRI

3457. SHRI GADHVI MUKESH BHAIRAVADANJI:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to expand the activities of Indian Plasma Research Institute in Gandhinagar, Gujarat;
(b) if so, the details thereof; and
(c) the funds allocated for this purpose?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) Yes, Sir.
(b) The Institute for Plasma Research (IPR) at Gandhinagar, an autonomous Institute of the Department of Atomic Energy (DAE), is devoted to the study of plasma science and its applications, especially those related to advanced nuclear energy technologies such as nuclear fusion. IPR is directly involved in R&D on magnetically confined fusion plasmas with devices like ADITYA & SST-1 tokamaks and participates in the frontline international R&D Program on understanding turbulence and transport of fusion grade plasmas and development of sophisticated fusion technologies in a step-wise manner. IPR is participating in the International Thermonuclear Experimental Reactor (ITER) experiment which is a joint experiment for exploitation of fusion energy involving Europe, China, US, Japan, Korea, Russia and India. The expansion activities of IPR are listed below:
• operation of the fusion technology development programs and exploitation of machines like SST1 and ADITYA for critical physics studies
• commissioning of major infrastructure development at the new Fusion Research and Technology Centre at a new campus near Ahmedabad
• training of manpower in India and abroad, in collaboration with Saha Institute of Nuclear Physics (SINP), IIT Delhi etc.
• giving thrust to a vibrant domestic fusion materials' research program jointly with other DAE Institutions and selected University centers.
• careful and quantitative appraisal of magnetic fusion neutron sources as potential candidates for actinide burning, fissile fuel breeding and hybrid power production system.

(c) During the XI Plan period IPR has been allotted with an amount of Rs.1259.64 crore, which includes funding for ITER India to the tune of Rs.870.14 crore. The total sanctioned cost of ITER Project is Rs.2500 crore, over a period of ten years for the construction phase. (http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3461
TO BE ANSWERED ON 01.12.2010

SETTING UP OF NUCLEAR POWER PLANTS

3461. SHRI S.S. RAMASUBBU:
Will the PRIME MINISTER be pleased to state:
(a) whether the proposed setting up of some nuclear power plants in different parts of the country are facing serious hurdles from various quarters;
(b) if so, the details thereof;
(c) whether the Government has taken any steps to address the problems for early setting up of the above projects;
(d) if so, the details thereof; and
(e) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)to(e) There are no serious hurdles faced from any quarter. However sometimes there are certain misgivings related to public acceptance. These are being addressed through structured public awareness programmes. In addition, the Project Affected Persons have issues concerning compensation for land and rehabilitation package, which are being settled in consultation with respective state governments.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3563
TO BE ANSWERED ON 01.12.2010

NUCLEAR POWER PLANTS ALONG COASTLINES

3563. DR. PADMASINHA BAJIRAO PATIL:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has recently conducted any study to explore the possibility of setting up nuclear plants along the vast coastline of the country;
(b) if so, the details thereof;
(c) whether the Environment Ministry has objected to setting up these plants; and
(d) if so, the steps taken to resolve the differences between the Ministries?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)&(b) The Site Selection Committee (SSC) of the central government had evaluated coastal sites offered by States for setting up nuclear power parks of 6000-10000 MW comprising of large capacity reactors based on international co-operation. Based on the recommendations of the SSC, the central government has accorded 'in principle' approval of new coastal sites at Kovvada in Andhra Pradesh, Chhaya Mithi Virdi in Gujarat and Haripur in West Bengal and the full potential of the previously approved sites at Kudankulam in Tamilnadu and Jaitapur in Maharashtra.
(c) No, Sir.
(d) Does not arise.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3649
TO BE ANSWERED ON 01.12.2010

RADIATION FROM URANIUM MINES

3649. SHRI M.I. SHANAVAS:
SHRI M.B. RAJESH:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has received reports regarding radiation exposure of women, children and others residing near Banduhurang open cast uranium mines and such others mines in the country;
(b) if so, the details thereof, mine-wise; and
(c) the remedial measures taken/ proposes to be taken to ensure safety of the people residing near uranium mines in the country?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) No Sir. However, there were unsubstantiated media reports.
(b) Uranium mining has not caused any health related hazards in mining areas.
(c) The operations of Uranium Corporation of India Limited (UCIL), a Public Sector Undertaking under the Department of Atomic Energy for carrying out the mining and processing of Uranium minerals, are carried out under strict surveillance of Atomic Energy Regulatory Board(AERB)/State Pollution Control Board, Director General of Mines & Safety(DGMS). UCIL has a track record of adopting absolute safe and environment friendly working practices in uranium mining and processing activities as prescribed by AERB. For systematic and effective monitoring of radiation levels in and around the mines, mill, tailing pond, a well equipped Health Physics Unit cum Environmental Survey Laboratory of Bhabha Atomic Research Centre (BARC), which are independent of UCIL, has been in operation since inception of the mines and related facilities. The reports of the survey are reviewed by AERB through its various constituents. UCIL provides comprehensive health care to all persons employed in mine and their families.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3654
TO BE ANSWERED ON 01.12.2010

GLOBAL CENTRE FOR NUCLEAR ENERGY PARTNERSHIP

3654. SHRI MILIND DEORA:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government intends to set up a global centre for nuclear energy partnership;
(b) if so, the details thereof;
(c) the reasons behind the initiative;
(d) whether the Government has also granted in-principle approval to five energy parks at five coastal sites in India;
(e) if so, the details thereof;
(f) the time-frame for the establishment of the energy parks; and
(g) the increase in the installed nuclear power capacity as determined by the Government because of the above initiative?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) Yes, Sir.
(b) & (c) As nuclear energy expands world wide, there has to be a science based approach by developing nuclear systems that are intrinsically safe and secure and proliferation resistant. India is in a position to make an important contribution towards this as a country with advanced nuclear technology with comprehensive capability over all aspects of the nuclear fuel cycle and on the basis of its robust indigenous programme and by helping in fostering international cooperation to realize the above objectives. Based on this philosophy, Government of India has decided to setup a Global Centre for Nuclear Energy Partnership. It will be located at village–Kheri-Jassaur near Bahadurgarh, Haryana on nearly 200 acres area in two segments.
This is likely to facilitate national as well as international travelers being near to New Delhi airport and will work in the following four areas :
1. Advanced Nuclear Energy System Studies
2. Nuclear Security
3. Radiation Safety
4. Applications of Radioisotopes and Radiation Technology.
(d) Yes, Sir.
(e) The details are :

Sl. No.	Location & State	No. of Reactors & Capacity (MW)
1.	Kudankulam, Tamilnadu *	4 X1000
2.	Jaitapur, Maharashtra	6 X 1650

3.	Kovvada, Andhra Pradesh	6 X 1000
4.	Chhaya Mithi Virdi, Gujarat	6 X 1000
5.	Haripur, West Bengal	6 X 1000

* KK 1&2 (2X1000 MW) are already at an advanced stage of construction at the site

(f) The pre project activities at these sites are in hand. The plan is to commence work at above sites towards end of XI Five Year Plan / beginning of XII FiveYear Plan in a phased manner on the basis of setting up of two reactors in each phase at a site, with a lag of about three to four years between phases.

(g) A capacity of about 32000 MW will be added on realization of the potential of these sites.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3676
TO BE ANSWERED ON 01.12.2010

NUCLEAR ENERGY PROGRAMME

3676. SHRI HARISHCHANDRA CHAVAN:
SHRI RAMSINH RATHWA:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has formulated a three stage nuclear energy programme on the basis of indigenous nuclear fuel sources to provide long-term energy security to the country;
(b) if so, the details thereof; and
(c) the present status thereof ?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) Yes, Sir.
(b) The three-stage nuclear power programme is aimed at optimum utilization of the indigenous nuclear resource profile of limited uranium and abundant thorium. It comprises Pressurised Heavy Water Reactors (PHWRs) based on natural uranium with a potential of about 10,000 MW in the first stage, Fast Breeder Reactors (FBRs) utilising plutonium-uranium fuel cycle in the second stage with a power potential of around 5,00,000 MW and Reactors for utilization of thorium in the third stage with immense potential to sustain the country's energy needs for several hundred years. The three stages have fuel cycle linkages and have to be gone through sequentially.
(c) The first stage has reached a state of commercial maturity with seventeen PHWRs (4240 MW) in operation and one PHWR (Kaiga Unit -4 of 220 MW) in the process of first start this month. Construction of two PHWRs each of 700 MW has started at Kakrapar in Gujarat. In addition, two 700 MW PHWRs have been launched at Rawatbhata in Rajasthan. The second stage has been launched and a 500 MW Prototype Fast Breeder Reactor (PFBR) is under advanced stage of construction at Kalpakkam, Tamilnadu. The technologies for the third stage are in the process of development.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO : *233
TO BE ANSWERED ON 25/11/2010

DEMAND AND SUPPLY OF URANIUM

* 233 : SHRI ANIL MADHAV DAVE
Will the PRIME MINISTER be pleased to state:
a) the gap between the demand and supply of uranium for reactors; and
b) in what way the Government proposes to fill this gap?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) A statement is placed on the table of the House

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.233 DUE FOR ANSWER ON 25.11.2010 BY SHRI ANIL MADHAV DAVE REGARDING DEMAND AND SUPPLY OF URANIUM
(a) Out of 19 reactors (4560 MW) in operation, 8 reactors (1500 MW) are under International Atomic Energy Agency (IAEA) safeguards and use imported uranium. There is no gap in demand and availability of uranium for these reactors. The remaining 11 reactors (3060 MW) operate on indigenous uranium which is not available in the required quantity at present. These reactors are therefore operated at about 70 % of their maximum power level.
(b) Pursuant to several initiatives of the Government, indigenous fuel supply has improved. The projects of opening new uranium mines and processing facilities in the country are continuing with a view to closing the gap between supply and demand.
(http://www.dae.nic.in/writereaddata/rss251110_233.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1706
TO BE ANSWERED ON 25.11.2010

CONTENTS OF URANIUM IN WATER

1706. SHRI H.K. DUA:
SHRI SATYAVRAT CHATURVEDI:
SHRI MOTILAL VORA:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the excess content of uranium is found in water in the Malwa region, particularly in Bhatinda, Mansa, Faridkot and Ferozpur regions of Punjab;
(b) the kind of its effect on the health of people of these regions;
(c) the reasons for excess content of uranium in the water of this region; and
(d) the steps Government is taking to provide pure and hygienic water to people?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Yes, Sir. Based on a study conducted by the Bhabha Atomic Research Centre (BARC) in collaboration with Guru Nanak Dev University (GNDU), Amritsar, Uranium content of 235 number of water samples, collected from canals and bore wells from four districts (Bhatinda, Mansa, Faridkot and Firozpur) of Punjab during September-October, 2009 was measured. The results of the study reveal that about 50% of total samples have Uranium concentration above the limit prescribed by the Atomic Energy Regulatory Board (AERB).
(b) Department of Atomic Energy has not carried out any health study in this region.
(c) The source of uranium in ground water in the affected areas could be due to natural geological formations. Isotopic analysis of uranium has established that ground water in the Malwa region contains natural uranium.
(d) Ground water with higher uranium concentration can be made potable by use of techniques such as Reverse Osmosis (RO). BARC has developed requisite technology in this regard. The technology developed by BARC in this regard could be made available for water purification.

(http://www.dae.nic.in/writereaddata/rs251110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1708
TO BE ANSWERED ON 25.11.2010

SIGNING OF CONVENTION ON SUPPLEMENTARY COMPENSATION

1708. SHRI D. RAJA
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the country had approached IAEA and signed Nuclear damages pact namely "Convention on Supplementary Compensation" (CSC) with it;
(b) if so, the details thereof;
(c) whether it is also a fact that as per CSC, the operator would be fully responsible for any nuclear damage and not the supplier;
(d) if so, the details thereof;
(e) whether this CSC agreement was signed by India under the pressure of US authorities as they are apprehensive of Nuclear Liability Act as passed by Indian Parliament; and
(f) if so, the details thereof?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27 October 2010 in accordance with Article XVII of the Convention. The Convention has not yet ratified by India.
(c)&(d) As per CSC, the liability of the operator for nuclear damage shall be absolute. However, according to CSC, the national law may provide the right of recourse to the operator against the supplier if this is expressly provided for by a contract in writing.
(e) No Sir.
(f) Does not arise.
(http://www.dae.nic.in/writereaddata/rs251110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1709
TO BE ANSWERED ON 25.11.2010

FUNDS FOR URANIUM PRODUCTION

1709. SHRI DHIRAJ PRASAD SAHU:
Will the PRIME MINISTER be please to state:
(a) whether it is a fact that Government has allocated 700 crores to 800 crores under the Eleventh Plan to enhance the production of uranium in the country;

(b) if so, the details thereof and the separate percentage of plan and non-plan expenditure out of the allocation; and

(c) the volume of domestic production of uranium in the country at the end of Eleventh Plan after the said expenditure and the extent by which it would exceed the production of the year 2004-05?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Government of India's allocation to Uranium Corporation of India Limited(UCIL)), a Public Sector Undertaking under the Department of Atomic Energy, which is engaged in mining and processing Uranium minerals, is 1,280/- crore under the Eeleventh Five Year Plan.

(b) The entire allocation is towards plan expenditure. The details are as under:

S.No	Name of the Scheme	Amount in Crore
Continuing Scheme		
1	Kylleng Pyndengsohiong Uranium Mining and Milling Project at Mawthabah, West Khasi Hills District, Meghalaya	209.00
2	Uranium Ore Mining and Milling Project at Lambapur, Nalgonda District, Andhra Pradesh	96.00
3	Uranium Ore Mining Project at	25.76

	Bandhuhurang, East Singhbhum District, Jharkhand	
4	Uranium Ore Mining Project at Bagjata, East Singhbhum District, Jharkhand	9.11
5	Uranium Ore Mining Project at Mohuldih, East Singhbhum District, Jharkhand	37.16
6	Uranium Ore Mining and Processing Project at Tummalapale Cuddapah District, Andhra Pradesh	539.44
Total Continuing Scheme		916.47
Expansion and New Scheme		
7	Enhancement of capacity of Turamdih Mine, East Singhbhum District, Jharkhand	20.00
8	Expansion of Jaduguda Mill, East Singhbhum District, Jharkhand	10.00
9	Expansion of Turamdih Mill, East Singhbhum District, Jharkhand	37.50
10	Uranium Project at Gogi, Gulbarga District, Karnataka	106.00
11	Tummalapalle Expansion Project, Cuddapah District, Andhra Pradesh	190.03
Total New Schemes		363.53
GRAND TOTAL		1,280

(c) It is not in the public interest to disclose the volume of domestic production of uranium in the country.
(http://www.dae.nic.in/writereaddata/rs251110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1710
TO BE ANSWERED ON 25.11.2010

URANIUM RESERVES IN STATES

1710 SHRI MANGALA KISAN
(a) Whether it is a fact that uranium reserves have been explored in several states of the country especially Orissa;

(b) If so, the States having these reserves and the quantum of uranium found; and
(c) the states where commercial production has been started with these reserves and the quantity of average annual production from these reserves ?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Yes Sir. Survey and exploration for uranium in India is carried out by Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy. Every year, surveys are conducted and a number of uranium anomalies are located in different parts of the country. So far, no uranium deposits have been established in the state of Orissa.

(b) AMD has established 1,49,654 (as on 31.10.2010) tonnes of uranium resources as per the following table :

STATE	**ESTIMATED RESOURCES (TONNES U3O8)**
ANDHRA PRADESH	66205
CHHATTISGARH	3986
HIMACHAL PRADESH	784
JHARKHAND	48074
KARNATAKA	4682
MAHARASHTRA	355
MEGHALAYA	18578
RAJASTHAN	6105
UTTAR PRADESH & UTTARAKHAND	885
TOTAL	**149654**

(c) At present two processing plants at Jaduguda & Turamdih in Jharkhand State are in operation. Both the plants are running almost at their full capacity. It is not in public interest to disclose the quantity of Uranium produced in the Country.

(HTTP://WWW.DAE.NIC.IN/WRITEREADDATA/RS251110.PDF)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1711
TO BE ANSWERED ON 25.11.2010

INTERNATIONAL CONVENTION ON SUPPLEMENTARY COMPENSATION

1711. SHRI T.M. SELVAGANAPATHI:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the country held discussions with the International Atomic Energy Agency for accessions to the International Convention on Supplementary Compensation (CSC) for nuclear damage;
(b) if so, the details of the outcome thereon;
(c) whether there has been a criticism that the Nuclear Liability Bill passed was a non CSC compliant; and
(d) if so, the details thereof?
ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27 October 2010. The Convention has not yet been ratified by India. Prior to signing procedural issues were discussed with IAEA.
(c) & (d) The basic elements of the Civil Liability for Nuclear Damage Act, 2010 are compliant with CSC. Some potential suppliers have however raised certain issues mainly relating to application of right of recourse of the operator as provided in the act.

(http://www.dae.nic.in/writereaddata/rs251110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1712
TO BE ANSWERED ON 25.11.2010

AMENDMENT TO ATOMIC ENERGY ACT

1712. SHRI SABIR ALI:
Will the PRIME MINISTER be pleased to state:
(a) whether Government contemplates any amendment to the Atomic Energy Act to facilitate private partnership in generating nuclear energy;
(b) if so, the details thereof; and
(c) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) to (c) The Atomic Energy Act, 1962 allows the Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government Company. As of today Nuclear Power Corporation of India Limited (NPCIL) & Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) are two Public Sector Undertakings authorized for this purpose. Private Sector can participate in setting up of nuclear power plants as a junior equity partner. For the present, participation of Indian private sector in nuclear power generation projects will continue to be as per the existing provisions of Atomic Energy Act, 1962.
Private sector in India is in a position to participate in setting up nuclear power plants through supply of components, equipment and works contracts.

(http://www.dae.nic.in/writereaddata/rs251110.pdf)

LOK SABHA
UNSTARRED QUESTION NO.2394
TO BE ANSWERED ON 24.11.2010

SHRIMATI SUPRIYA SULE:
DR. SANJEEV GANESH NAIK:

CO-OPERATION IN CIVIL NUCLEAR SECTOR

Will the Minister of EXTERNAL AFFAIRS be pleased to state :

(a) whether India and Japan have held talks for cooperation in the civil nuclear sector;
(b) if so, whether Japan has agreed to pay special attention to the issue of nuclear disarmament and non-proliferation and step up efforts to bring India to sign Nuclear Non-Proliferation Treaty (NPT);
(c) if so, the details thereof;
(d) whether in the past, Japan had declined to cooperate with India in the civil nuclear front; and
(e) if so, the extent to which both countries have agreed to improve the cooperation in the civil nuclear sector?

ANSWER
THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SMT. PRENEET KAUR)

(a) to (e) Yes. India and Japan are negotiating an Agreement for Cooperation in the Peaceful Uses of Nuclear Energy. This agreement is about civil nuclear cooperation and does not relate to the Nuclear Non-Proliferation Treaty. Both sides have affirmed that cooperation in the civil nuclear energy sector will open up new opportunities for further developing the India-Japan Strategic and Global Partnership.
(http://meaindia.nic.in/mystart.php?id=100516755)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2304
TO BE ANSWERED ON 24.11.2010

SECRETIVE PURCHASES

2304. SHRI RUDRA MADHAB RAY:
SHRI R. THAMARAISELVAN:

Will the PRIME MINISTER be pleased to state:

(a) whether substantial procurement made by the department/nuclear plants were given to single or linked vendors;
(b) if so, the details thereof and the reasons therefor;
(c) whether the Comptroller and Auditor General (CAG) has made certain observations in this regard;
(d) if so, the details thereof; and
(e) the action taken/proposed to be taken by the Government to remedy the situation?

ANSWER

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

(a)to(d) Comptroller and Auditor General of India (CAG) conducted performance audit of procurement of stores and inventory management of the units of Department of Atomic Energy and has submitted a report (No.13 of 2010-11). The report has, inter-alia, pointed out that substantial procurements made by the Department were based on restrictive mode of tendering (single/limited tenders) and as such could achieve only limited competition. In this connection it is mentioned that the Department resorts to single/limited mode of tendering in cases of procurement of strategic and/or sensitive materials, technologies and original equipment items. This is also done in order to expedite supplies and ensure confidentiality of our designs and technologies.

(e) The Department has issued instructions to its Directorate of Purchase and Stores to review all related issues to reduce number of single/limited tenders. Instructions have also been issued to expedite e-procurement wherever feasible to ensure transparency, competitiveness and efficiency in procurements.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2326
TO BE ANSWERED ON 24.11.2010

JOINT VENTURE TO PRODUCE NUCLEAR FUEL

2326. SHRI P. BALRAM NAIK:
SHRI SURESH KUMAR SHETKAR:
Will the PRIME MINISTER be pleased to state:
(a) whether India and Russia are considering the setting up of a joint venture to produce nuclear fuel in India;
(b) if so, the details worked out for this purpose so far; and
(c) the implementation status thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (c) As per the Road Map for the Serial Construction of the Russian design Nuclear Power Plants in the Republic of India signed on 12.03.2010, both the parties confirm their interest for the joint development of uranium deposits in the Russian Federation and third countries, and for setting up a joint venture for fabrication of nuclear fuel subject to techno-commercial viability.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2347
TO BE ANSWERED ON 24.11.2010

EXPORT OF RARE EARTH MATERIALS

2347. SHRI ANTO ANTONY:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has signed any agreement with Japanese Government for export of rare earth materials to that country;
(b) if so, the details thereof; and
(c) the quantum and value of rare earth materials likely to be exported in the near future?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a), (b) & (c) No Sir. However, Indian Rare Earths Ltd., a public sector undertaking, has signed an agreement with Toyota Tsusho Corporation, Japan dated 04.12.2009 for the sale of 6000 MT/annum of rare earth chloride from
its Monozite Processing plant at OSCOM, Orissa, which is expected to commence production by the end of 2011.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2378
TO BE ANSWERED ON 24.11.2010

NEW POWER PROJECTS

2378. SHRI SIVASAMI C.:
SHRI P. KUMAR:
Will the PRIME MINISTER be pleased to state:
(a) whether India and United Kingdom has recently signed any agreement for setting up of five new nuclear plants in various parts of the country;
(b) if so, the locations identified for the purpose; and
(c) the progress made in setting up of these plants?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) No, Sir.
(b) & (c) Do not arise.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2408
TO BE ANSWERED ON 24.11.2010

STATUS OF INDO-US COOPERATION

2408. SHRI M.B. RAJESH:
SHRI PRALHAD JOSHI:
SHRI KAMLESH PASWAN:
Will the PRIME MINISTER be pleased to state:
(a) whether during the visit of US President to India, any agreement has been reached on setting up of fast breeder nuclear power plants;
(b) if so, the details thereof, location-wise;
(c) the nature of assistance proposed to be provided by USA; and
(d) the time by which these plants are likely to become functional?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) No, Sir.
(b) to (d) Do not arise.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2444
TO BE ANSWERED ON 24.11.2010

PRIVATE SECTOR PARTICIPATION IN NUCLEAR POWER SECTOR

2444. SHRI MANOHAR TIRKEY:
SHRI PRASANTA KUMAR MAJUMDAR:
SHRI R. THAMARAISELVAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has decided not to allow private sector participation in the atomic energy sector;
(b) if so, the details thereof and the reasons therefor;
(c) whether some private sector companies have shown interest in this field;
(d) if so, the details thereof;
(e) whether the Government proposes to acquire uranium assets abroad by forging joint venture with other companies; and
(f) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) & (b) The Atomic Energy Act, 1962 gives power to Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government company in which not less than 51% of the paid up share capital is held by the Central Government. At present Indian private sector can participate in nuclear power generation projects as a minority partner. For the present, participation of Indian private sector in nuclear power generation projects will continue to be as per the existing provisions of Atomic Energy Act, 1962.
(c) & (d) Some organizations in the private sector have, at various fora indicated their interest in nuclear power generation. At present companies in Private sector in India are participating in a major way in setting up nuclear power plants through supply of components, equipment and works contracts.
(e) & (f) Nuclear Power Corporation of India Ltd and Uranium Corporation of India Ltd- Public Sector Undertakings of Department of Atomic Energy are considering to form joint venture companies to explore the possibility of acquiring the uranium assets abroad.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2480
TO BE ANSWERED ON 24.11.2010

URANIUM RADIATION

2480. SHRI M.I. SHANAVAS:
Will the PRIME MINISTER be pleased to state:
(a) the number of cases of radiation exposure to scientists and workers employed in various nuclear plants in the country during each of the last three years, plant-wise;
(b) whether the gamma radiation levels of Kalpakkam Nuclear Power Plant in Tamil Nadu is fifty times more than the normal limit; and
(c) if so, the action taken/proposed to be taken to keep the radiation level within the limits?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) The number of persons exposed to radiation in various nuclear power plants during the last three years (viz. 2007, 2008 and 2009) is given in the attached Table – 1.
(b) No Sir.

The dose limits prescribed by Atomic Energy Regulatory Board (AERB) and International Bodies are as follows:
The occupational exposure of any worker shall not exceed an effective dose of 20 mSv per year averaged over five consecutive years and the effective dose in any single year shall not exceed 30 mSv (as stipulated by AERB) or 50 mSv (as prescribed by International Commission on Radiological Protection (ICRP) and International Atomic Energy Agency (IAEA)). The annual effective dose limit for common public as prescribed by AERB, ICRP and IAEA is 1 mSv.
The average effective dose received by occupational workers at Nuclear Power Plant at Kalpakkam (i.e., Madras Atomic Power Station) is about 20 times less than the limit prescribed by AERB. The gamma dose is a fraction of the total effective dose.
Dose received by the public in the area is far below the prescribed limit for public.
(c) Sir, the present steps are sufficient to keep the doses to the workers well within the regulatory limits.

Table - 1.
Effective dose received by the occupational workers at Indian Nuclear Power plants during last 3 years i.e., 2007-09

NUCLEAR POWER STATIONS	YEAR	NUMBER OF PERSONS MONITORED BY TLD **	NUMBER OF PERSONS EXPOSED BELOW **DETECTION LIMIT* (BDL)**	NUMBER OF PERSONS EXPOSED WITHIN AERB DOSE LIMIT	NUMBER OF PERSONS EXPOSED ABOVE AERB LIMIT
TARAPUR ATOMIC POWER STATION	2007 2008 2009	5490 5659 5229	1893 1849 1901	3597 3810 3328	NIL NIL NIL
RAJASTHAN ATOMIC POWER STATION	2007 2008 2009	3504 3746 4406	1368 1272 2578	2136 2474 1828	NIL NIL NIL
MADRAS ATOMIC POWER STATION	2007 2008 2009	1226 1175 1183	183 266 185	1043 909 998	NIL NIL NIL
NARORA ATOMIC POWER STATION	2007 2008 2009	2551 2008 2139	418 371 302	2131 1637 1837	2 NIL NIL
KAKRAPAR ATOMIC POWER STATION	2007 2008 2009	1551 1662 2328	840 697 467	711 965 1861	NIL NIL NIL
KAIGA GENERATING STATION	2007 2008 2009	3477 2879 2508	1490 1551 1432	1987 1328 1074	NIL NIL 2

** Thermoluminescent dosimeter

Note :

1. During the last three years 4 employees at the Indian Nuclear Power Plants (2 at Narora in 2007 and 2 at Kaiga in 2009) received radiation doses above the annual limit prescribed by the AERB i.e. 30 mSv. In all these four cases the doses received during that year were lower than the annual dose limits prescribed by ICRP i.e 50 mSv. The accumulated total doses for these four employees over 5 year block were within the prescribed limit of 100 mSv. These cases were medically monitored but no detectable effects were seen in any of these employees.
2. The dose limits prescribed by AERB and International Bodies are as follows:
The occupational exposure of any worker shall not exceed an effective dose of 20 mSv per year averaged over five consecutive years and the effective dose in any single year shall not exceed 30 mSv (as stipulated by AERB) or 50 mSv (as prescribed by International Commission on Radiological Protection (ICRP) and International Atomic Energy Agency (IAEA)). The annual effective dose limit for common public as prescribed by AERB, ICRP and IAEA is 1 mSv.
3. Detection Limit * of dose with Thermoluminescent Dosimeterr (TLD) = 0.05 mSv.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2507
TO BE ANSWERED ON 24.11.2010

CIVIL LIABILITY FOR NUCLEAR DAMAGES ACT, 2010

2507. SHRI NEERAJ SHEKHAR:
PROF. (DR.) RANJAN PRASAD YADAV:
SHRIMATI JAYA PRADA:
SHRIMATI JAYASHREEBEN PATEL:
SHRI SHRIPAD YESSO NAIK:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government is contemplating to amend the Civil Liability for Nuclear Damage Act, 2010;
(b) if so, the details thereof and the reasons therefor;
(c) whether the Government proposes to start negotiations with various nuclear energy majors of USA and other countries as reported in the media;
(d) if so, the details thereof, country-wise; and
(e) the time by which these negotiations are likely to be concluded?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) & (b) There is no proposal of amendment of the Civil Liability of Nuclear Damage Act 2010 at present.
(c) to (e) The Central Government is taking necessary action to implement India's nuclear energy programme, including nuclear power projects in technical cooperation with other countries..
Pursuant to the agreements for cooperation in peaceful uses of nuclear energy with France, Russia and USA, commercial negotiations for setting up of nuclear power plants in India in cooperation with entities in Russia, France and USA are continuing. Negotiations with companies from Russia and France have advanced considerably.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2523
TO BE ANSWERED ON 24.11.2010

NUCLEAR POWER PLANTS

2523. SHRI JEETENDRA SINGH BUNDELA:
SHRI SAJJAN VERMA:
SHRI PRALHAD JOSHI:
SHRI SANJAY BRIJKISHORLAL NIRUPAM:
DR. THOKCHOM MEINYA:
SHRI HANSRAJ G. AHIR:
SHRI VILAS MUTTEMWAR:
DR. BALIRAM:
SHRI ANAND PRAKASH PARANJPE:
SHRIMATI ANNU TANDON:
SHRIMATI SHRUTI CHOUDHRY:
SHRI RAMSINH RATHWA:
SHRI OM PRAKASH YADAV:
SHRI E.G. SUGAVANAM:
Will the PRIME MINISTER be pleased to state:
(a) the details of nuclear power plants in the country with installed capacity;
(b) the actual nuclear power produced by each of these plants during each of the last three years;
(c) the per unit cost of nuclear power produced in the country;
(d) the details of countries who have helped in building these plants;
(e) whether these countries have agreed to build some more nuclear plants in the country;
(f) if so, the locations identified alongwith capacity of plants proposed to be installed there; and
(g) the progress made so far in setting up these plants and the time by which they are likely to be made functional?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)&(b) There are 19 reactors in operation in the country. In addition, four reactors [(Kaiga-4 (220 MW), KK-1&2 (2x1000 MW) and 500 MW PFBR] are under advanced stages of construction to be progressively completed in next three years. Work of four more reactors (KAPP-3&4-2x700 MW) and (RAPP-7&8-2x700 MW) has been just launched. These are slated for completion by the year 2017. The details of reactors in operation and their generation are attached as Annexure-1.
(c) The tariffs of nuclear power stations range from 94 paise per unit to 304 paise per unit. The average tariff of nuclear power in the country is about 230 paise per unit.

(d) TAPS 1&2 were set up in the year 1969, on turnkey basis by the USA and RAPS-1&2 were set up in technical cooperation with Canada. After nuclear cooperation ended in 1974, completion of RAPS-2 and setting up of additional reactors has been through indigenous effort. Kudankulam Nuclear Power Project (KK 1&2 – 2x1000 MW), presently under construction, is being set up in technical cooperation with Russian Federation.
(e) After the fruition of international cooperation in nuclear energy, enabling agreements have been concluded with the Russian Federation, France and the USA for setting up nuclear power reactors in the country.
(f) The details of sites accorded in principle approval for setting up nuclear power plants in cooperation with foreign countries are:-

Location & State	**Designated country for cooperation**	**No. of Reactors ***
Kudankulam, Tamil Nadu	Russian Federation	6 at each site
Haripur, West Bengal		
Jaitapur, Maharashtra	France	6
Kovvada, Andhra Pradesh	USA	6 at each site
Chhaya Mithi Virdi, Gujarat		

*These reactors are 1000 MW or higher unit size.

(g) The pre-project activities at these sites including land acquisition at the new sites of Andhra Pradesh and Gujarat are in progress. The plan is to commence work at above sites towards end of XI Plan / beginning of XII Plan in a phased manner on the basis of setting up of two reactors in each phase at a site, with a lag of about three to four years between phases. The expected gestation time of these reactors is six years.

Annexure-1

Generation in Million units

Location & State	Units	Capacity in MW	Generation (Million Units)		
			2007-08	2008-09	2009-10
Tarapur, Maharashtra	TAPS-1	160	1312	1007	1199
	TAPS-2	160	1239	1349	1251
	TAPS-3	540	2668	1922	2787
	TAPS-4	540	2120	2030	2754
Rawatbhata, Rajasthan	RAPS-1	220	0	0	0
	RAPS-2	200	327	0	950
	RAPS-3	220	1239	1156	1277
	RAPS-4	220	1103	1303	1143

	RAPS-5	220	-	-	301
	RAPS-6	220	-	-	3
Kalpakkam, Tamilnadu	MAPS-1	220	730	732	938
	MAPS-2	220	1019	785	1108
Narora, Uttar Pradesh	NAPS-1	220	83	740	818
	NAPS-2	220	591	0	0
Kakrapar, Gujarat	KAPS-1	220	904	259	0
	KAPS-2	220	1126	954	1068
Kaiga, Karnataka	KAIGA-1	220	1050	1157	1011
	KAIGA-2	220	1036	1079	1111
	KAIGA-3	220	409	452	1112

Notes:
RAPS-1 shutdown from 09.10.2004 for review of continuation of operation.
RAPS-5 started commercial operation on 04.02.2010.
RAPS-6 started commercial operation on 31.03.2010.
NAPS-1shutdown for EMCCR from 01.11.05 to 24.02.2008.
KAIGA-3 commenced commercial operation on 06.05.2007.
NAPS-2 is shutdown for EMCCR from 18.12.2007 to 06.09.2010.
KAPS-1 is shutdown for EMCCR since 01.07.2008.
RAPS-2 1shutdown for EMFR from 02.07.2007 to 31.08.2009.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO: 138
TO BE ANSWERED ON 18/11/2010

IMPORT OF URANIUM

*138. SHRI DHIRAJ PRASAD SAHU:
Will the PRIME MINISTER be pleased to state:
(a) whether Government has signed any agreement with foreign countries to ensure regular supply of uranium to the nuclear reactors in the country;
(b) if so, the details thereof, country-wise;
(c) whether Government proposes to import uranium from Australia, which is the largest producer of uranium; and
(d) if so, the quantity of uranium imported from Australia during the last three years?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (d) A statement is placed on the table of the House

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.138 DUE FOR ANSWER ON 18.11.2010 BY SHRI DHIRAJ PRASAD SAHU REGARDING IMPORT OF URANIUM

(a) Yes, Sir.

(b) Contracts have been signed with France, Russia and Kazakhstan for supply of Uranium. The details of the contracts are detailed below :-

Sr No	Country	Details of contract
1.	France	300 MT of Uranium Ore Concentrates
2.	Russia	2000 MT Natural Uranium Oxide Pellets spread over a period of five to six years starting from the year 2009; and One time supply of 58 MT of enriched Uranium Dioxide Pellets
3.	Kazakhstan	2100 MT of Natural Uranium Ore Concentrate, spread over six years starting from the year 2009

(c) No, Sir
(d) Does not arise.

(http://www.dae.nic.in/writereaddata/rss181110_138.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.931
TO BE ANSWERED ON 18.11.2010

DELAY IN WORKING OF FBR

931. SHRI MANGALA KISAN:
Will the PRIME MINISTER be pleased to state:
(a) whether India's first Fast Breeder Reactor (FBR) for commercial nuclear energy generation is likely to be delayed;
(b) if so, the reasons for the delay; and
(c) the time by which this would be made operational?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Yes, Sir.
(b) The first commercial Fast Breeder Reactor being built in India is an advanced technology reactor built with indigenous resources. The materials, specifications and the dimensions of equipment are unique and several developments were taken up concurrently with project implementation. Indian industries found it challenging to achieve the tolerances and the stringent specifications. Industries had to develop several new machine tools and develop new procedures to meet the design specifications. Development of new machine tools and procedures required more time than envisaged.
(c) The reactor will be operational in year 2013.

(http://www.dae.nic.in/writereaddata/rs181110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.932
TO BE ANSWERED ON 18.11.2010

AGREEMENT WITH FRANCE FOR NUCLEAR REACTORS

932. SHRIMATI GUNDUSUDHARANI:
Will the PRIME MINISTER be pleased to state:
(a) whether an agreement with France has been entered into for setting up of two 1650 MW reactors recently;
(b) whether any time-frame has been fixed for commissioning of the above projects; and
(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)to(c) Yes Sir. An Inter-Governmental Agreement (IGA) between India & France was signed on 30th September, 2008. IGA, inter-alia provided for construction of six 1650MW reactors. Pursuant to that, a Memorandum of Understanding (MoU) for setting up of 6 x 1650 MW Light Water Reactors (LWRs) in a phased manner at Jaitapur in Maharashtra has been entered into between Nuclear Power Corporation of India Limited (NPCIL) and AREVA, France on 4th February, 2009. The negotiations on techno-commercial offer are in final stage. The work on first set of twin reactor is expected to commence in the year 2012 with a completion period of the about six years.

(http://www.dae.nic.in/writereaddata/rs181110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.933
TO BE ANSWERED ON 18.11.2010

COMMISSIONING OF REACTOR IN KUDANKULAM NUCLEAR POWER PLANT

933. SHRIMATI KANIMOZHI:
Will the PRIME MINISTER be pleased to state:
(a) whether the scheduled commissioning of the first reactor in the Kudankulam Nuclear Power Plant has been delayed to March, 2011;
(b) if so, the reasons for the delay;
(c) whether this is likely to affect the scheduled commissioning of the second reactor;
(d) if so, the details thereof; and
(e) the steps taken by Government to remedy the impact of this delay?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) The construction activities of Unit-1 of Kudankulam have been completed. This unit is under advance stage of commissioning. Commissioning of electrical, water system & other auxiliary systems have been completed. Commissioning of reactor is in hand. The criticality procedure starting with fuel loading & subsequent testing of power operation are planned from December 2010 onwards.
(b) The delay in the project schedule has been on account of delay in sequential supply of equipment / components from Russian Federation.
(c) Yes sir.
(d) The second reactor (Unit-2) will be commissioned after a gap of 8-10 months after commissioning of first reactor (Unit-1).
(e) The matter regarding supplies of equipment has been taken up with Russian Federation at the highest levels of Governments. There has consequently been an improvement in the supplies.

(http://www.dae.nic.in/writereaddata/rs181110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.934
TO BE ANSWERED ON 18.11.2010

REDUCING THE PLF OF NUCLEAR POWER PLANTS

934. SHRI DHIRAJ PRASAD SAHU:
Will the PRIME MINISTER be pleased to state:
(a) whether the Plant Load Factor (PLF) of Nuclear Power Plants has come down to 60 per cent during the current year;
(b) if so, the details thereof and the reasons therefor; and
(c) the steps taken or being taken by Government to meet the fuel shortage?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) No, Sir. The Plant Load Factor (PLF) of nuclear power plants has gone up from 50% in the year 2008-09 to 61% in the year 2009-10 and further improved to 64% in the period April – October of the current year. The increase has been possible with improvement in domestic fuel supply and import of fuel for reactors under safeguards.
(c) The Government is making efforts to augment domestic fuel supplies by opening of new mines and processing facilities.

(http://www.dae.nic.in/writereaddata/rs181110.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.312
TO BE ANSWERED ON 11.11.2010

TARGET FIXED FOR NUCLEAR POWER

312. SHRI NARENDRA KUMAR KASHYAP:
Will the PRIME MINISTER be pleased to state:
(a) the details of targets fixed for generation of nuclear power during the Eleventh Plan, plant-wise;
(b) the details of targets achieved during the first three years of Eleventh Plan since 2007;
(c) whether the country is short of nuclear power generation;
(d) if so, the details thereof, plant-wise; and
(e) the steps taken by Government to increase nuclear power generation in the country?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) The details are attached as Annexure-1
(c) There are nineteen reactors (4560 MW) in operation.
- Seven reactors (1400 MW) are under International Atomic Energy Agency Safeguards and use imported uranium. These reactors operate at full capacity.
- Ten reactors (2840 MW) use domestic uranium which is not available in the required quantity. These are operated at reduced power levels.
- One reactor (RAPS-1) is under long term shutdown.
- One reactor KAPS-1 (220 MW) after completion of Renovation & Modernisation is awaiting fuel for restart.

(d) The details are attached as Annexure-2.
(e) The government is making efforts to augment domestic fuel supplies by opening of new mines and processing facilities. The shortage of domestic uranium is expected to be overcome progressively in about two years. In addition, nuclear power generation is expected to increase with completion of projects presently at an advanced stage of construction.

Annexure-1

Station	XI Plan Target (MU)		Actual Generation in first three years of XI Plan
	Original	MTA	
Tarapur Atomic Power Station	40108	39555	21640
Rajasthan Atomic Power Station	32953	24057	8801
Madras Atomic Power Station	12853	10773	5313
Narora Atomic Power Station	10717	7239	2232
Kakrapar Atomic Power Station	10422	8855	4311
Kaiga Generating Station	24367	18297	8418
Kudankulam Power Station	29784	15832	0
PFBR, Kalpakkam	2190	0	0
TOTAL	163394	124608	50715

Annexure-2

Table - Reactors in Operation NO	Unit	Rated Capacity (MW)	Current (Nov 2010) Operating Power Level
Reactors fuelled by Imported Uranium			
1	TAPS-1	160	160
2	TAPS-2	160	160
3	RAPS-2	200	200
4	RAPS-3	220	220
5	RAPS-4	220	220
6	RAPS-5	220	220
7	RAPP-6	220	220
	Total	1400	1400
Reactors fuelled by domestic Uranium – Operated at about 70% of full power			
8	TAPS-3	540	420
9	TAPS-4	540	405
10	MAPS-1	220	145
11	MAPS-2	220	125
12	NAPS-1	220	155
13	NAPS-2	220	155
14	KAPS-2	220	100

15	KAIGA-1	220	150
16	KAIGA-2	220	140
17	KAIGA-3	220	155
	Total	2840	1950
Shut Down for techno economic assessment on continuation of operations			
18	RAPS-1	100	
Reactors awaiting fuel after Renovation & Modernization			
19	KAPS-1	220	
TOTAL Capacity	4560	3350	

The generation in April - October 2010 is 13,305 Million units (MUs). The generation during the same period last year was 10,376 MUs.

(http://www.dae.nic.in/writereaddata/rs111110.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.313
TO BE ANSWERED ON 11.11.2010

DEATH OF SCIENTISTS IN BARC

313. SHRI RAJEEV CHANDRASEKHAR:
Will the PRIME MINISTER be pleased to state:
(a) whether the death of scientists of Bhabha Atomic Research Centre (BARC) due to cancer have come to the notice of Government;
(b) if so, the details thereof; and
(c) the corrective measures Government has taken or proposes to take in this regard?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Number of cancer deaths amongst BARC scientists does not exceed the national average.
The government has come across newspaper reports on the subject. These are not factually correct. BARC has a strength of more than 16,000 employees including nearly 12,000 scientific and technical personnel. Since January 1995 till end of December 2009, as per records, a total of 69 serving employees of BARC (below 60 years of age) have died due to cancer. All of them are not scientists. The annual rate of death due to cancer for BARC employees will be approximately 30.94 per 1,00,000. The death rate in Mumbai as per the cancer registry is about 36 per 100000. This rate depends on age group, diagnostic and treatment facilities, lifestyle, location etc. Thus the death rate of BARC employees due to cancer is not more than the national average or that for the city of Mumbai. None of these deaths is attributable to their working with or exposure to radiation or radioactivity.
c) As a welfare policy, DAE provides excellent healthcare to its employees (including those of BARC) and their families through its Contributory Health Services Scheme (CHSS) covering all illnesses. In Mumbai, BARC caters to more than 87,000 beneficiaries of CHSS. This is done through a 330 bed BARC hospital, 12 peripheral dispensaries as well as reputed tertiary care hospitals. As regards radiation exposure of its employees, all the protective measures and exposure control protocols are in place as per international standards. The exposures of the employees are within the limits approved by the International Commission on Radiological Protection (ICRP) and the occupational and research workers are regularly monitored for the same.

(http://www.dae.nic.in/writereaddata/rs111110.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 314
TO BE ANSWERED ON 11.11.2010

ATOMIC ENERGY POTENTIAL OF THE COUNTRY

314. SHRI BIRENDRA PRASAD BAISHYA:
Will the PRIME MINISTER be pleased to state:
(a) the details of atomic energy potential of the country;
(b) whether the Ministry has explored or plan to explore the North-Eastern Region for nuclear fuel/material; and
(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) The total Uranium reserves in the country are 1,49,654 tonnes of U3O8 as on 31.10.2010. Based on the indigenous uranium reserves, the country has a nuclear power potential of 10,000 MWe in terms of Pressurised Heavy Water Reactors (PHWR) adopting the strategies of closed fuel cycle and the three stage nuclear program India has the potential for achieving energy security for the future.
(b) Yes Sir.
(c) The Department of Atomic Energy has been exploring for uranium resources in various parts of the country including the NE region. Deposits of uranium were discovered in Kylleng – Pyndengsohiong-Mawthavah region (KPM) in West Khasi Hills District of Meghalaya currently pre-project activities for uranium mining there are on. In addition to the above, exploration for uranium are going on in other regions of Meghalaya

(http://www.dae.nic.in/writereaddata/rs111110.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.315
TO BE ANSWERED ON 11.11.2010

NUCLEAR POWER PLANTS

315. SHRI MOINUL HASSAN:
Will the PRIME MINISTER be pleased to state:
(a) whether any of the nuclear power plants in the country would be transferred to private ownership;
(b) if so, the details thereof; and
(c) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) No Sir.
(b) Not applicable in view of (a) above.
(c) The Atomic Energy Act, 1962 gives power to Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government company in which not less than 51% of the paid up share capital is held by the Central Government. At present Indian private sector can participate in nuclear power generation projects as a minority partner. For the present participation of Indian private sector in nuclear power generation projects will continue to be as per the existing provisions of Atomic Energy Act, 1962

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.316
TO BE ANSWERED ON 11.11.2010

NUCLEAR DEAL WITH CANADA

316. DR. T. SUBBARAMI REDDY:
Will the PRIME MINISTER be pleased to state:
(a) whether India concluded an agreement with Canada on civilian nuclear deal;
(b) if so, whether Canada is the ninth nation to enter into such an agreement with India;
(c) if so, to what extent both India and Canada have agreed to work together to have cooperation in civilian nuclear deal; and
(d) to what extent this is working beneficial for both the countries?
ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):

(a) Yes, Sir.
(b) The following agreements on peaceful uses of nuclear energy have been concluded between India and other countries in the recent period:

Sl. No.	Agreement	Country	Date of signing	Remarks
1.	Agreement between the Government of the Republic of India and the Government of the French Republic on the Development of Peaceful Uses of Nuclear Energy	France	30.9.2008	The Agreement entered into force w.e.f. 14.01.2010
2.	An agreement between Govt. of Republic of India and the Government of United States concerning Peaceful Uses of Nuclear Energy	USA	10.10.2008	Entered into force on 06.12.2008
3.	Arrangements and Procedures agreed between the Govt. of India and the Govt. of the USA Pursuant to Article 6(iii) of their Agreement for Cooperation Concerning Peaceful Uses of Nuclear Energy	USA	30.07.2010	Entered into force on 21.09.2010
4.	An agreement between Govt. of Republic of India and the Government of the Russian Federation on cooperation in the	Russia	05.12.2008	Entered into force on 15.05.2009

	construction of additional nuclear power plant units at Kudankulam site as well as in the construction of Russian designed nuclear power plants at new sites in the Republic of India.			
5.	Agreement between Govt. of the Republic of India and the Govt. of the Republic of Namibia on cooperation in peaceful uses of nuclear energy	Namibia	31.08.2009	
6.	MOU between DAE of the Govt. of the Republic of India and the Nuclear Energy Agency, Regulatory Agency of the Govt. of Mongolia on cooperation in the field of Peaceful Use of Radioactive Minerals and Nuclear Energy	Mongolia	14.09.2009	
7.	Joint Declaration by India and the United Kingdom on Civil Nuclear Cooperation	UK	11.02.2010	
8.	Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the Use of Atomic Energy for Peaceful Purposes	Russia	12.03.2010	Entered into force on 20.09.2010
9.	Agreement between the Government of the Republic of India and the Government of Canada for Cooperation in Peaceful Uses of Nuclear Energy	Canada	27.06.2010	
10.	Agreement between the Government of the Republic of India and the Government of the Argentine Republic for Cooperation in the Peaceful Uses of Nuclear Energy	Argentina	23.09.2010	

(c) & (d) The Agreement signed with Canada has not yet entered into force.

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.317
TO BE ANSWERED ON 11.11.2010

SETTING UP OF NUCLEAR PLANTS ON COASTLINE

317. SHRI RANJITSINH VIJAYSINH MOHITE-PATIL:
Will the PRIME MINISTER be pleased to state:
(a) whether Government is going to open up India's vast coastline to the possibility of setting up of nuclear plant having document issued by the Ministry of Environment to this effect;
(b) whether the proposed notification speaks of exemption to Department of Atomic Energy projects from regulations, preventing industrial activity in ecology sensitive areas of the coast; and
(c) whether Government is sure that these installations are not a risk of being attacked and whether they pose grave environment threat?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) India has a long coastline of about 7500 km. Nuclear Power Plants require a very small stretch. Nuclear power plants at coastal locations are already in operation/under construction in Maharashtra and Tamilnadu. More nuclear power plants are planned at coastal locations in Andhra Pradesh, Gujarat, Maharashtra, Tamilnadu and West Bengal.
(b) The land area from High Tide Line to 500 metres on the landward side of the sea front is called Coastal Regulation Zone (CRZ). The prevailing CRZ notification allows setting up of nuclear power projects after environmental clearance from Ministry of Environment and Forests (MoEF) is obtained.
(c) Nuclear power projects do not pose any environmental threat. Adequate design, physical protection and security systems are put in place to ensure that these are not vulnerable to attacks.

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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):
(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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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
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 (Rs)
2007 & 2008	**NIL**		
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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 448
TO BE ANSWERED ON 10.11.2010

PRODUCTION OF NUCLEAR ENERGY

448. SHRI RAMSINH RATHWA:
DR. KIRIT PREMJIBHAI 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):
(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.
(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

LOK SABHA
UNSTARRED QUESTION NO.384
TO BE ANSWERED ON 10.11.2010

SHRI YASHWANT SINHA:

NUCLEAR WEAPON

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the Washington based Institute for Science and International Security has reported on the basis of newly obtained satellite imagery a step-up in the pace of nuclear weapons development activity in Pakistan; and
(b) if so, the reaction of the Union Government thereto?

ANSWER THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) Yes, the Government has seen report of Institute of Science and International Security, Washington regarding Pakistan's activities relating to its nuclear weapons programme.

(b) The Government continuously monitors all developments having a bearing on national security and takes all necessary steps to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516663)

LOK SABHA
UNSTARRED QUESTION NO.322
TO BE ANSWERED ON 10.11.2010

SHRI VILAS MUTTEMWAR:

CHINA-PAK NUCLEAR DEAL

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the Government is aware that China is transferring ring magnet to Pakistan for making nuclear weapons;
(b) if so, the reaction of the Government thereto;
(c) whether the Government has held any talks with China in this regard; and
(d) if so, the reaction of China thereto?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS(SHRI S.M. KRISHNA)

(a) to (d) Government is aware of China-Pakistan nuclear cooperation. India's concerns in this regard have been clearly conveyed to the Chinese side. The Chinese government has stated that its cooperation with Pakistan in nuclear energy is for peaceful purposes. Government keeps a constant watch on all developments having a bearing on India's national interest and takes all necessary measures to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516652)

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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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 Virdi, 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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=3)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=6)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=7)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(a) No, Sir.
(b)to(d) Do not arise.

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=8)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
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):
(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
Total	5.18

(http://www.dae.nic.in/writereaddata/rs091210.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4623
TO BE ANSWERED ON 08.12.2010

REVIEW OF ATOMIC ENERGY ACT

4623. SHRI RAJAIAH SIRICILLA:
SHRI HARISH CHANDRA CHAVAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to review the Atomic Energy Act;
(b) if so, the reasons therefor; and
(c) the steps proposed to be taken in the said matter?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (c) Yes Sir. The Government is reviewing the Atomic Energy Act, 1962 including for strengthening the Atomic Energy Regulatory Board (AERB) and for carrying out responsibilities relating to ratification of Convention on Physical Protection of Nuclear Materials (CPPNM). This is under examination in the Department.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4627
TO BE ANSWERED ON 08.12.2010

ENVIRONMENT CLEARANCE TO POWER PROJECTS

4627. SHRI RAKESH SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether Nuclear Power Corporation of India Ltd. (NPCIL) had submitted a proposal for obtaining environmental clearance of Atomic Power Projects at village Chutka in Madhya Pradesh;
(b) if so, the present status of the project; and
(c) the time by which environmental clearance is likely to be obtained?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to(c) NPCIL had submitted Terms of Reference (TOR) for Environmental Impact Assessment (EIA) of the project at village Chutka in Madhya Pradesh to the Expert Appraisal Committee of the Ministry of Environment & Forests (MoE&F). The committee has advised NPCIL to provide additional details on land use and environmental setting of site. The revised TORs are under finalization. This will be followed by EIA Report by the MoE&F accredited agency, a public hearing and detailed scrutiny by the Expert Advisory Committee before environmental clearance is accorded by MOE&F. The plan is to commence work on the project, after obtaining statutory clearances by MoE&F and Atomic Energy Regulatory Board, in the year 2012.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4649
TO BE ANSWERED ON 08.12.2010

ENVIRONMENTAL IMPACT ON NUCLEAR POWER STATION

4649. SHRIMATI SUPRIYA SULE:
SHRI SANJAY DINA PATIL:
DR. SANJEEV GANESH NAIK:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has taken note of criticism by the Scientists of Environment Law Alliance Worldwide of Environment Impact Assessment (EIA) report on proposed Nuclear Power Station at Ratnagiri;
(b) if so, the reaction of the Government thereon;
(c) whether the EIA conducted by the Government of the world's largest Nuclear Power Park coming up at Jaitapur in the Ratnagiri district of Maharashtra has been found to suffer from serious lapses;
(d) if so, the other points made in the report; and
(e) the steps taken to remove these lapses?

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

(a)to(e) The Environmental Impact Assessment of the project was conducted by National Environmental Engineering Research Institute (NEERI). In addition, Bombay Natural History Society (BNHS) have submitted a detailed bio-diversity assessment report of the region. The Central Water and Power Research Station has carried out model studies for temperature rise of the cooling water. All objections/ criticisms of the reports have been given due consideration by the Expert Appraisal Committee (EAC) of the Ministry of Environment & Forest (MoE&F) for strategic projects. MoE&F have after detailed consideration of the reports and the objections thereto have accorded Environmental Clearance for the project subject to certain conditions. This inter alia, include preparation of a comprehensive bio diversity plan, constitution of a monitoring committee, reinforcement of environmental stewardship programme of NPCIL and clearances by the Atomic Energy Regulatory Board. The conditions stipulated by MoE&F shall be adhered to.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4651
TO BE ANSWERED ON 08.12.2010

NUCLEAR POWER PLANTS

4651. SHRI KUNWAR REWATI RAMAN SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether the State Government of Uttar Pradesh has sought setting up of nuclear power plants in the State as it is facing severe power shortage;
(b) if so, the details thereof;
(c) the locations identified in U.P. for setting up of nuclear power plants; and
(d) the time by which a nuclear plant is likely to become operational?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)to(d) Two nuclear power reactors (NAPS-1&2) of 220 MW each are in operation at Narora, Uttar Pradesh (UP). In addition UP has share of power from Nuclear Power Stations RAPS units 3 to 6 in Rajasthan. The State Government has requested setting up of nuclear power project in Bundelkhand region of UP. However, proposal for a suitable site for evaluation by the Site Selection Committee is awaited. The site at Narora also has additional potential for setting up additional nuclear power capacity of 1400 MW. Decision regarding setting up new project will be taken in the 12th Five Year Plan period. The completion time of a project is about 6 years.

(http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4760
TO BE ANSWERED ON 08.12.2010

CONVENTION ON SUPPLEMENTARY COMPENSATION

4760. SHRI RADHA MOHANSINGH:
SHRI ANANTKUMARHEGDE:
SHRI PARTAP SINGH BAJWA:
SHRI GURUDAS DASGUPTA:
SHRIMATI BOTCHA JHANSHI LAKSHMI:
SHRI MANISH TEWARI:
SHRIMATI SUPRIYA SULE:
SHRI PRABODH PANDA:
SHRI BHUDEO CHOUDHARY:
SHRI ASADUDDIN OWAISI:
SHRI JAGDISH SHARMA:
SHRI R. THAMARAISELVAN:
SHRI K.R.G. REDDY:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has signed the International Convention on Supplementary Compensation (CSC) for Nuclear Damages after the enactment of Civil Liability for Nuclear Damages Act,2010;
(b) if so, the details thereof;
(c) whether any discussion has been held with the International Atomic Energy Agency (IAEA) in this regard;
(d) if so, the details thereof;
(e) whether there is any divergence between Civil Liability for Nuclear Damages Act, 2010 and the CSC on suppliers liability;
(f) if so, the facts in this regard; and
(g) the differences and the similarities in both these documents?

ANSWER

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

(a) to (d) - Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27th October 2010. The Convention has not yet been ratified by India. Prior to signing, procedural issues were discussed with IAEA.

(e) to (g) - The basic elements of the Civil Liability for Nuclear Damages Act, 2010 are compliant with CSC. Some potential suppliers have however raised certain issues mainly relating to application of right of recourse of the operator as provided in the Act. (http://www.dae.nic.in/writereaddata/ls081210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2482
TO BE ANSWERED ON 02.12.2010

SUICIDES IN NUCLEAR PLANTS

2482 SHRI P. RAJEEVE:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the number of suicides are increasing in the nuclear plants;
(b) if so, whether the Department has conducted any inquiry in this regard?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) The cases of unnatural deaths of employees of Department of Atomic Energy during the last five years were analyzed. It was seen that out of 29 death cases, 22 were alleged suicides. Only one case, among these, related to work related discontentment. All other cases of alleged suicidal deaths are on account of personal/family reasons. Sensitive cases are monitored by the Department in consultation with Intelligence Bureau and the local Police.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 2483
TO BE ANSWERED ON 02.12.2010

SIGNING OF CSC FOR NUCLEAR DAMAGE

2483. SHRI D. RAJA
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that India has signed the Convention on Supplementary Compensation (CSC) for nuclear damage; and

(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27 October 2010. The Convention has not yet been ratified by India.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2484
TO BE ANSWERED ON 02.12.2010

URANIUM RESERVES IN THE COUNTRY

2484. SHRI MANGALA KISAN
Will the PRIME MINISTER be pleased to state:
(a) the quantum of uranium reserves in the country;
(b) whether it is a fact that country is passing through uranium crisis as a result of which nuclear reactors are likely to be affected ;
(c) whether Government has conducted any survey on availability of atomic and nuclear minerals in the country; and
(d) if so, whether Government is working on a plan for production of uranium from country's reserves and their optimum utilization with a view to achieve self-reliance in the field of nuclear energy?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent Unit of the Department of Atomic Energy has established 1,49,654 tonnes of Uranium resources as on 31.10.2010.
(b) The indigenous uranium is presently not available in the required quantity as a result of which nuclear power reactors fuelled by indigenous uranium are being operated at about 70% of their rated power.
(c) Yes, Sir.
(d) Yes, Sir.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=3)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2485
TO BE ANSWERED ON 02.12.2010

NUCLEAR ENERGY PLANTS IN ANDHRA PRADESH

2485 SHRI M.V. MYSURA REDDY
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that Government is planning to start two nuclear energy plants in Andhra Pradesh;
(b) if so, the details thereof;
(c) the estimated investment required for the above two plants;
(d) whether the State Government of Andhra Pradesh has given its consent for the above plants;
(e) if not, the reasons therefor; and
(f) the plan of action to pool the resources and execute the above projects in the State?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) The central government has accorded 'in principle' approval for the site at Kovvada in Srikakulam district of Andhra Pradesh for locating six units of 1000 MW each, to be set up in technical cooperation with the USA. The first phase consists of two units.
(c) The estimates of investments would emerge after the discussions with the Companies of the USA are concluded.
(d) The government of Andhra Pradesh had offered the site at Kovvada for setting up nuclear power plants which has been approved. The pre project activities including land acquisition in co-operation with state government have commenced.
(e) Does not arise.
(f) The nuclear power project at Kovvada is a central sector project to be executed by Nuclear Power Corporation of India Limited, a PSU of Department of Atomic Energy. The investment will be met through combination of external credit/market borrowings and equity.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=4)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2486
TO BE ANSWERED ON 02.12.2010

ATOMIC POWER PLANTS IN RAJASTHAN

2486. SHRI ASHK ALI TAK:
Will the PRIME MINISTER be pleased to state:
(a) the number of atomic energy power stations to be set up in Rajasthan alongwith the location thereof;
(b) whether the proposal to increase the power generation capacity of power station Rawatbhata, Kota is under consideration of Government ; and
(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)to(c) Presently six nuclear power reactors (RAPS 1 to 6) with a total installed capacity of 1180 MW are in operation at Rawatbhata in Rajasthan. The Central Government had accorded financial sanction for two more nuclear power reactors of 700 MW capacity each, to be set up at the same site. The project has been launched and excavation is in progress. On completion of the project in the year 2016-17, the station capacity will increase to 2580 MW.

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2487
TO BE ANSWERED ON 02.12.2010

CLOSING DOWN OF UNITS OF NPCIL

2487. SHRI R.C. SINGH:
Will the PRIME MINISTER be pleased to state:
(a) the reasons that Nuclear Power Corporation of India Limited (NPCIL) decided to close down two units of Tarapur; and
(b) total production from the units of Tarapur, unit-wise?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) All the four units of Tarapur Atomic Power Station are in operation and no decision is taken to close them.
(b) The generation of electricity from TAPS 1 to 4 in the year 2009-10 and 2010-11 (upto October 2010), unit-wise is as follows :-

Unit	Generation in Million Units	
	2009-10	2010-11 (upto Oct.)
TAPS-1	1199	686
TAPS-2	1251	812
TAPS-3	2787	1743
TAPS-4	2754	1632

(http://www.dae.nic.in/writereaddata/rs021210.pdf#page=6)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. *317
TO BE ANSWERED ON 01.12.2010

NUCLEAR POWER PLANTS

*317. SHRI KAMLESH PASWAN:
SHRI SYED SHAHNAWAZ HUSSAIN:
Will the PRIME MINISTER be pleased to state:
(a) whether India is still dependent upon foreign countries for setting up of nuclear power plants, their operation, nuclear feed stock, etc.;
(b) if so, the reaction of the Government thereto;
(c) the percentage of foreign components used in the construction of nuclear power plants;
(d) the steps taken/proposed to be taken to use indigenous technology and local components in building the nuclear power plants in the country; and
(e) the time by which the country is likely to be self-reliant in the matter of nuclear power?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to(e) A statement is laid on the table of the House:
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STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. *317 FOR ANSWER ON 01.02.2010 BY SHRI KAMALESH PASWAN AND SHRI SYED SHAHNAWAZ HUSSAIN REGARDING NUCLEAR POWER PLANTS.

(a) & (b) No Sir. India is not dependent on foreign countries for setting up and operation of pressurised heavy water (PHWR) type nuclear power plants.
(c) to (e) There is very limited foreign components in PHWR plants (220 MW to 700 MW capacity).
For a rapid growth in the nuclear power capacity, Nuclear Power Corporation of India Limited (NPCIL) is taking steps to install large size (1000 MW and higher) nuclear power plants in technical cooperation with a few foreign vendors. These plants will be in addition to the installation of several indigenous PHWR units.
India is already self reliant in PHWR technology and its fuel cycle.

(http://www.dae.nic.in/writereaddata/lssq011210_317.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3457
TO BE ANSWERED ON 01.12.2010

EXPANSION OF IPRI

3457. SHRI GADHVI MUKESH BHAIRAVADANJI:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to expand the activities of Indian Plasma Research Institute in Gandhinagar, Gujarat;
(b) if so, the details thereof; and
(c) the funds allocated for this purpose?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) Yes, Sir.
(b) The Institute for Plasma Research (IPR) at Gandhinagar, an autonomous Institute of the Department of Atomic Energy (DAE), is devoted to the study of plasma science and its applications, especially those related to advanced nuclear energy technologies such as nuclear fusion. IPR is directly involved in R&D on magnetically confined fusion plasmas with devices like ADITYA & SST-1 tokamaks and participates in the frontline international R&D Program on understanding turbulence and transport of fusion grade plasmas and development of sophisticated fusion technologies in a step-wise manner. IPR is participating in the International Thermonuclear Experimental Reactor (ITER) experiment which is a joint experiment for exploitation of fusion energy involving Europe, China, US, Japan, Korea, Russia and India. The expansion activities of IPR are listed below:
• operation of the fusion technology development programs and exploitation of machines like SST1 and ADITYA for critical physics studies

• commissioning of major infrastructure development at the new Fusion Research and Technology Centre at a new campus near Ahmedabad
• training of manpower in India and abroad, in collaboration with Saha Institute of Nuclear Physics (SINP), IIT Delhi etc.
• giving thrust to a vibrant domestic fusion materials' research program jointly with other DAE Institutions and selected University centers.
• careful and quantitative appraisal of magnetic fusion neutron sources as potential candidates for actinide burning, fissile fuel breeding and hybrid power production system.

(d) During the XI Plan period IPR has been allotted with an amount of Rs.1259.64 crore, which includes funding for ITER India to the tune of Rs.870.14 crore. The total sanctioned cost of ITER Project is Rs.2500 crore, over a period of ten years for the construction phase.

http://www.dae.nic.in/writereaddata/ls011210.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3461
TO BE ANSWERED ON 01.12.2010

SETTING UP OF NUCLEAR POWER PLANTS

3461. SHRI S.S. RAMASUBBU:
Will the PRIME MINISTER be pleased to state:
(a) whether the proposed setting up of some nuclear power plants in different parts of the country are facing serious hurdles from various quarters;
(b) if so, the details thereof;
(c) whether the Government has taken any steps to address the problems for early setting up of the above projects;
(d) if so, the details thereof; and
(e) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)to(e) There are no serious hurdles faced from any quarter. However sometimes there are certain misgivings related to public acceptance. These are being addressed through structured public awareness programmes. In addition, the Project Affected Persons have issues concerning compensation for land and rehabilitation package, which are being settled in consultation with respective state governments.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3563
TO BE ANSWERED ON 01.12.2010

NUCLEAR POWER PLANTS ALONG COASTLINES

3563. DR. PADMASINHA BAJIRAO PATIL:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has recently conducted any study to explore the possibility of setting up nuclear plants along the vast coastline of the country;
(b) if so, the details thereof;
(c) whether the Environment Ministry has objected to setting up these plants; and
(d) if so, the steps taken to resolve the differences between the Ministries?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)&(b) The Site Selection Committee (SSC) of the central government had evaluated coastal sites offered by States for setting up nuclear power parks of 6000-10000 MW comprising of large capacity reactors based on international co-operation. Based on the recommendations of the SSC, the central government has accorded 'in principle' approval of new coastal sites at Kovvada in Andhra Pradesh, Chhaya Mithi Virdi in Gujarat and Haripur in West Bengal and the full potential of the previously approved sites at Kudankulam in Tamilnadu and Jaitapur in Maharashtra.
(c) No, Sir.
(d) Does not arise.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3649
TO BE ANSWERED ON 01.12.2010

RADIATION FROM URANIUM MINES

3649. SHRI M.I. SHANAVAS:
SHRI M.B. RAJESH:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has received reports regarding radiation exposure of women, children and others residing near Banduhurang open cast uranium mines and such others mines in the country;
(b) if so, the details thereof, mine-wise; and
(c) the remedial measures taken/ proposes to be taken to ensure safety of the people residing near uranium mines in the country?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) No Sir. However, there were unsubstantiated media reports.
(b) Uranium mining has not caused any health related hazards in mining areas.
(c) The operations of Uranium Corporation of India Limited (UCIL), a Public Sector Undertaking under the Department of Atomic Energy for carrying out the mining and processing of Uranium minerals, are carried out under strict surveillance of Atomic Energy Regulatory Board(AERB)/State Pollution Control Board, Director General of Mines & Safety(DGMS). UCIL has a track record of adopting absolute safe and environment friendly working practices in uranium mining and processing activities as prescribed by AERB. For systematic and effective monitoring of radiation levels in and around the mines, mill, tailing pond, a well equipped Health Physics Unit cum Environmental Survey Laboratory of Bhabha Atomic Research Centre (BARC), which are independent of UCIL, has been in operation since inception of the mines and related facilities. The reports of the survey are reviewed by AERB through its various constituents. UCIL provides comprehensive health care to all persons employed in mine and their families.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3654
TO BE ANSWERED ON 01.12.2010

GLOBAL CENTRE FOR NUCLEAR ENERGY PARTNERSHIP

3654. SHRI MILIND DEORA:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government intends to set up a global centre for nuclear energy partnership;
(b) if so, the details thereof;
(c) the reasons behind the initiative;
(d) whether the Government has also granted in-principle approval to five energy parks at five coastal sites in India;
(e) if so, the details thereof;
(f) the time-frame for the establishment of the energy parks; and
(g) the increase in the installed nuclear power capacity as determined by the Government because of the above initiative?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) Yes, Sir.
(b) & (c) As nuclear energy expands world wide, there has to be a science based approach by developing nuclear systems that are intrinsically safe and secure and proliferation resistant. India is in a position to make an important contribution towards this as a country with advanced nuclear technology with comprehensive capability over all aspects of the nuclear fuel cycle and on the basis of its robust indigenous programme and by helping in fostering international cooperation to realize the above objectives. Based on this philosophy, Government of India has decided to setup a Global Centre for Nuclear Energy Partnership. It will be located at village–Kheri-Jassaur near Bahadurgarh, Haryana on nearly 200 acres area in two segments.

This is likely to facilitate national as well as international travelers being near to New Delhi airport and will work in the following four areas :
1. Advanced Nuclear Energy System Studies
2. Nuclear Security
3. Radiation Safety
4. Applications of Radioisotopes and Radiation Technology.
(d) Yes, Sir.
(e) The details are :

Sl. No.	Location & State	No. of Reactors & Capacity (MW)
1.	Kudankulam, Tamilnadu *	4 X1000
2.	Jaitapur, Maharashtra	6 X 1650
3.	Kovvada, Andhra Pradesh	6 X 1000
4.	Chhaya Mithi Virdi, Gujarat	6 X 1000
5.	Haripur, West Bengal	6 X 1000

* KK 1&2 (2X1000 MW) are already at an advanced stage of construction at the site

(f) The pre project activities at these sites are in hand. The plan is to commence work at above sites towards end of XI Five Year Plan / beginning of XII FiveYear Plan in a phased manner on the basis of setting up of two reactors in each phase at a site, with a lag of about three to four years between phases.

(g) A capacity of about 32000 MW will be added on realization of the potential of these sites.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3676
TO BE ANSWERED ON 01.12.2010

NUCLEAR ENERGY PROGRAMME

3676. SHRI HARISHCHANDRA CHAVAN:
SHRI RAMSINH RATHWA:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has formulated a three stage nuclear energy programme on the basis of indigenous nuclear fuel sources to provide long-term energy security to the country;
(b) if so, the details thereof; and
(c) the present status thereof ?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) Yes, Sir.
(b) The three-stage nuclear power programme is aimed at optimum utilization of the indigenous nuclear resource profile of limited uranium and abundant thorium. It comprises Pressurised Heavy Water Reactors (PHWRs) based on natural uranium with a potential of about 10,000 MW in the first stage, Fast Breeder Reactors (FBRs) utilising plutonium-uranium fuel cycle in the second stage with a power potential of around 5,00,000 MW and Reactors for utilization of thorium in the third stage with immense potential to sustain the country's energy needs for several hundred years. The three stages have fuel cycle linkages and have to be gone through sequentially.
(c) The first stage has reached a state of commercial maturity with seventeen PHWRs (4240 MW) in operation and one PHWR (Kaiga Unit -4 of 220 MW) in the process of first start this month. Construction of two PHWRs each of 700 MW has started at Kakrapar in Gujarat. In addition, two 700 MW PHWRs have been launched at Rawatbhata in Rajasthan. The second stage has been launched and a 500 MW Prototype Fast Breeder Reactor (PFBR) is under advanced stage of construction at Kalpakkam, Tamilnadu. The technologies for the third stage are in the process of development.

(http://www.dae.nic.in/writereaddata/ls011210.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO : *233
TO BE ANSWERED ON 25/11/2010

DEMAND AND SUPPLY OF URANIUM

* 233 : SHRI ANIL MADHAV DAVE
Will the PRIME MINISTER be pleased to state:
a) the gap between the demand and supply of uranium for reactors; and
b) in what way the Government proposes to fill this gap?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) A statement is placed on the table of the House

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.233 DUE FOR ANSWER ON 25.11.2010 BY SHRI ANIL MADHAV DAVE REGARDING

DEMAND AND SUPPLY OF URANIUM

(a) Out of 19 reactors (4560 MW) in operation, 8 reactors (1500 MW) are under International Atomic Energy Agency (IAEA) safeguards and use imported uranium. There is no gap in demand and availability of uranium for these reactors. The remaining 11 reactors (3060 MW) operate on indigenous uranium which is not available in the required quantity at present. These reactors are therefore operated at about 70 % of their maximum power level.

(b) Pursuant to several initiatives of the Government, indigenous fuel supply has improved. The projects of opening new uranium mines and processing facilities in the country are continuing with a view to closing the gap between supply and demand.

(http://www.dae.nic.in/writereaddata/rss251110_233.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1706
TO BE ANSWERED ON 25.11.2010

CONTENTS OF URANIUM IN WATER

1706. SHRI H.K. DUA:
SHRI SATYAVRAT CHATURVEDI:
SHRI MOTILAL VORA:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the excess content of uranium is found in water in the Malwa region, particularly in Bhatinda, Mansa, Faridkot and Ferozpur regions of Punjab;
(b) the kind of its effect on the health of people of these regions;
(c) the reasons for excess content of uranium in the water of this region; and
(d) the steps Government is taking to provide pure and hygienic water to people?

ANSWER

THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Yes, Sir. Based on a study conducted by the Bhabha Atomic Research Centre (BARC) in collaboration with Guru Nanak Dev University (GNDU), Amritsar, Uranium content of 235 number of water samples, collected from canals and bore wells from four districts (Bhatinda, Mansa, Faridkot and Firozpur) of Punjab during September-October, 2009 was measured. The results of the study reveal that about 50% of total samples have Uranium concentration above the limit prescribed by the Atomic Energy Regulatory Board (AERB).
(b) Department of Atomic Energy has not carried out any health study in this region.
(c) The source of uranium in ground water in the affected areas could be due to natural geological formations. Isotopic analysis of uranium has established that ground water in the Malwa region contains natural uranium.
(d) Ground water with higher uranium concentration can be made potable by use of techniques such as Reverse Osmosis (RO). BARC has developed requisite technology in this regard. The technology developed by BARC in this regard could be made available for water purification.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1708
TO BE ANSWERED ON 25.11.2010

SIGNING OF CONVENTION ON SUPPLEMENTARY COMPENSATION

1708. SHRI D. RAJA
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the country had approached IAEA and signed Nuclear damages pact namely "Convention on Supplementary Compensation" (CSC) with it;
(b) if so, the details thereof;
(c) whether it is also a fact that as per CSC, the operator would be fully responsible for any nuclear damage and not the supplier;
(d) if so, the details thereof;
(e) whether this CSC agreement was signed by India under the pressure of US authorities as they are apprehensive of Nuclear Liability Act as passed by Indian Parliament; and
(f) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) & (b) Convention on Supplementary Compensation (CSC) was developed under the auspices of International Atomic Energy Agency (IAEA). India has signed the CSC in Vienna on 27 October 2010 in accordance with Article XVII of the Convention. The Convention has not yet ratified by India.
(c)&(d) As per CSC, the liability of the operator for nuclear damage shall be absolute. However, according to CSC, the national law may provide the right of recourse to the operator against the supplier if this is expressly provided for by a contract in writing.
(e) No Sir.
(f) Does not arise.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1709
TO BE ANSWERED ON 25.11.2010

FUNDS FOR URANIUM PRODUCTION

1709. SHRI DHIRAJ PRASAD SAHU:
Will the PRIME MINISTER be please to state:
(a) whether it is a fact that Government has allocated 700 crores to 800 crores under the Eleventh Plan to enhance the production of uranium in the country;

(b) if so, the details thereof and the separate percentage of plan and non-plan expenditure out of the allocation; and

(c) the volume of domestic production of uranium in the country at the end of Eleventh Plan after the said expenditure and the extent by which it would exceed the production of the year 2004-05?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Government of India's allocation to Uranium Corporation of India Limited(UCIL)), a Public Sector Undertaking under the Department of Atomic Energy, which is engaged in mining and processing Uranium minerals, is 1,280/- crore under the Eeleventh Five Year Plan.

(b) The entire allocation is towards plan expenditure. The details are as under:

S.No	Name of the Scheme	Amount in Crore
Continuing Scheme		
1	Kylleng Pyndengsohiong Uranium Mining and Milling Project at Mawthabah, West Khasi Hills District, Meghalaya	209.00
2	Uranium Ore Mining and Milling Project at Lambapur, Nalgonda District, Andhra Pradesh	96.00
3	Uranium Ore Mining Project at Bandhuhurang, East Singhbhum District, Jharkhand	25.76
4	Uranium Ore Mining Project at Bagjata, East Singhbhum District, Jharkhand	9.11
5	Uranium Ore Mining Project at Mohuldih, East Singhbhum District, Jharkhand	37.16
6	Uranium Ore Mining and Processing Project at Tummalapale Cuddapah District, Andhra Pradesh	539.44

	Total Continuing Scheme	916.47
Expansion and New Scheme		
7	Enhancement of capacity of Turamdih Mine, East Singhbhum District, Jharkhand	20.00
8	Expansion of Jaduguda Mill, East Singhbhum District, Jharkhand	10.00
9	Expansion of Turamdih Mill, East Singhbhum District, Jharkhand	37.50
10	Uranium Project at Gogi, Gulbarga District, Karnataka	106.00
11	Tummalapalle Expansion Project, Cuddapah District, Andhra Pradesh	190.03
	Total New Schemes	363.53
	GRAND TOTAL	1,280

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2304
TO BE ANSWERED ON 24.11.2010

SECRETIVE PURCHASES

2304. SHRI RUDRA MADHAB RAY:
SHRI R. THAMARAISELVAN:
Will the PRIME MINISTER be pleased to state:
(a) whether substantial procurement made by the department/nuclear plants were given to single or linked vendors;
(b) if so, the details thereof and the reasons therefor;
(c) whether the Comptroller and Auditor General (CAG) has made certain observations in this regard;
(d) if so, the details thereof; and
(e) the action taken/proposed to be taken by the Government to remedy the situation?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a)to(d) Comptroller and Auditor General of India (CAG) conducted performance audit of procurement of stores and inventory management of the units of Department of Atomic Energy and has submitted a report (No.13 of 2010-11). The report has, inter-alia, pointed out that substantial procurements made by the Department were based on restrictive mode of tendering (single/limited tenders) and as such could achieve only limited competition. In this connection it is mentioned that the Department resorts to single/limited mode of tendering in cases of procurement of strategic and/or sensitive materials, technologies and original equipment items. This is also done in order to expedite supplies and ensure confidentiality of our designs and technologies.
(e) The Department has issued instructions to its Directorate of Purchase and Stores to review all related issues to reduce number of single/limited tenders. Instructions have also been issued to expedite e-procurement wherever feasible to ensure transparency, competitiveness and efficiency in procurements.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2326
TO BE ANSWERED ON 24.11.2010

JOINT VENTURE TO PRODUCE NUCLEAR FUEL

2326. SHRI P. BALRAM NAIK:
SHRI SURESH KUMAR SHETKAR:
Will the PRIME MINISTER be pleased to state:
(a) whether India and Russia are considering the setting up of a joint venture to produce nuclear fuel in India;
(b) if so, the details worked out for this purpose so far; and
(c) the implementation status thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (c) As per the Road Map for the Serial Construction of the Russian design Nuclear Power Plants in the Republic of India signed on 12.03.2010, both the parties confirm their interest for the joint development of uranium deposits in the Russian Federation and third countries, and for setting up a joint venture for fabrication of nuclear fuel subject to techno-commercial viability.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2347
TO BE ANSWERED ON 24.11.2010

EXPORT OF RARE EARTH MATERIALS

2347. SHRI ANTO ANTONY:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has signed any agreement with Japanese Government for export of rare earth materials to that country;
(b) if so, the details thereof; and
(c) the quantum and value of rare earth materials likely to be exported in the near future?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a), (b) & (c) No Sir. However, Indian Rare Earths Ltd., a public sector undertaking, has signed an agreement with Toyota Tsusho Corporation, Japan dated 04.12.2009 for the sale of 6000 MT/annum of rare earth chloride from
its Monozite Processing plant at OSCOM, Orissa, which is expected to commence production by the end of 2011.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2378
TO BE ANSWERED ON 24.11.2010

NEW POWER PROJECTS

2378. SHRI SIVASAMI C.:
SHRI P. KUMAR:
Will the PRIME MINISTER be pleased to state:
(a) whether India and United Kingdom has recently signed any agreement for setting up of five new nuclear plants in various parts of the country;
(b) if so, the locations identified for the purpose; and
(c) the progress made in setting up of these plants?
ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) No, Sir.

(a) & (c) Do not arise.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2408
TO BE ANSWERED ON 24.11.2010

STATUS OF INDO-US COOPERATION

2408. SHRI M.B. RAJESH:
SHRI PRALHAD JOSHI:
SHRI KAMLESH PASWAN:
Will the PRIME MINISTER be pleased to state:
(a) whether during the visit of US President to India, any agreement has been reached on setting up of fast breeder nuclear power plants;
(b) if so, the details thereof, location-wise;
(c) the nature of assistance proposed to be provided by USA; and
(d) the time by which these plants are likely to become functional?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) No, Sir.

(b) to (d) Do not arise.

http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2444
TO BE ANSWERED ON 24.11.2010

PRIVATE SECTOR PARTICIPATION IN NUCLEAR POWER SECTOR

2444. SHRI MANOHAR TIRKEY:
SHRI PRASANTA KUMAR MAJUMDAR:
SHRI R. THAMARAISELVAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has decided not to allow private sector participation in the atomic energy sector;
(b) if so, the details thereof and the reasons therefor;
(c) whether some private sector companies have shown interest in this field;
(d) if so, the details thereof;
(e) whether the Government proposes to acquire uranium assets abroad by forging joint venture with other companies; and
(f) if so, the details thereof?

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

(a) & (b) The Atomic Energy Act, 1962 gives power to Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government company in which not less than 51% of the paid up share capital is held by the Central Government. At present Indian private sector can participate in nuclear power generation projects as a minority partner. For the present, participation of Indian private sector in nuclear power generation projects will continue to be as per the existing provisions of Atomic Energy Act, 1962.
(c) & (d) Some organizations in the private sector have, at various fora indicated their interest in nuclear power generation. At present companies in Private sector in India are participating in a major way in setting up nuclear power plants through supply of components, equipment and works contracts.
(e) & (f) Nuclear Power Corporation of India Ltd and Uranium Corporation of India Ltd- Public Sector Undertakings of Department of Atomic Energy are considering to form joint venture companies to explore the possibility of acquiring the uranium assets abroad.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVGOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2480
TO BE ANSWERED ON 24.11.2010

URANIUM RADIATION

2480. SHRI M.I. SHANAVAS:
Will the PRIME MINISTER be pleased to state:
(a) the number of cases of radiation exposure to scientists and workers employed in various nuclear plants in the country during each of the last three years, plant-wise;
(b) whether the gamma radiation levels of Kalpakkam Nuclear Power Plant in Tamil Nadu is fifty times more than the normal limit; and
(c) if so, the action taken/proposed to be taken to keep the radiation level within the limits?

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

(a) The number of persons exposed to radiation in various nuclear power plants during the last three years (viz. 2007, 2008 and 2009) is given in the attached Table – 1.
(b) No Sir.

The dose limits prescribed by Atomic Energy Regulatory Board (AERB) and International Bodies are as follows:
The occupational exposure of any worker shall not exceed an effective dose of 20 mSv per year averaged over five consecutive years and the effective dose in any single year shall not exceed 30 mSv (as stipulated by AERB) or 50 mSv (as prescribed by International Commission on Radiological Protection (ICRP) and International Atomic Energy Agency (IAEA)). The annual effective dose limit for common public as prescribed by AERB, ICRP and IAEA is 1 mSv.
The average effective dose received by occupational workers at Nuclear Power Plant at Kalpakkam (i.e., Madras Atomic Power Station) is about 20 times less than the limit prescribed by AERB. The gamma dose is a fraction of the total effective dose.
Dose received by the public in the area is far below the prescribed limit for public.
(c) Sir, the present steps are sufficient to keep the doses to the workers well within the regulatory limits.

Table - 1.
Effective dose received by the occupational workers at Indian

Nuclear Power plants during last 3 years i.e., 2007-09 NUCLEAR POWER STATIONS	YEAR	NUMBER OF PERSONS MONITORED BY TLD **	NUMBER OF PERSONS EXPOSED BELOW DETECTION LIMIT* (BDL)	NUMBER OF PERSONS EXPOSED WITHIN AERB DOSE LIMIT	NUMBER OF PERSONS EXPOSED ABOVE AERB LIMIT
TARAPUR ATOMIC POWER STATION	2007 2008 2009	5490 5659 5229	1893 1849 1901	3597 3810 3328	NIL NIL NIL
RAJASTHAN ATOMIC POWER STATION	2007 2008 2009	3504 3746 4406	1368 1272 2578	2136 2474 1828	NIL NIL NIL
MADRAS ATOMIC POWER STATION	2007 2008 2009	1226 1175 1183	183 266 185	1043 909 998	NIL NIL NIL
NARORA ATOMIC POWER STATION	2007 2008 2009	2551 2008 2139	418 371 302	2131 1637 1837	2 NIL NIL
KAKRAPAR ATOMIC POWER STATION	2007 2008 2009	1551 1662 2328	840 697 467	711 965 1861	NIL NIL NIL
KAIGA GENERATING STATION	2007 2008 2009	3477 2879 2508	1490 1551 1432	1987 1328 1074	NIL NIL 2

** Thermoluminescent dosimeter

Note :

1. During the last three years 4 employees at the Indian Nuclear Power Plants (2 at Narora in 2007 and 2 at Kaiga in 2009) received radiation doses above the annual limit prescribed by the AERB i.e. 30 mSv. In all these four cases the doses received during that year were lower than the annual dose limits prescribed by ICRP i.e 50 mSv. The accumulated total doses for these four employees over 5 year block were within the prescribed limit of 100 mSv. These cases were medically monitored but no detectable effects were seen in any of these employees.
2. The dose limits prescribed by AERB and International Bodies are as follows:

The occupational exposure of any worker shall not exceed an effective dose of 20 mSv per year averaged over five consecutive years and the effective dose in any single year shall not exceed 30 mSv (as stipulated by AERB) or 50 mSv (as prescribed by International Commission on Radiological Protection (ICRP) and International Atomic Energy Agency (IAEA)). The annual effective dose limit for common public as prescribed by AERB, ICRP and IAEA is 1 mSv.

3. Detection Limit * of dose with Thermoluminescent Dosimeterr (TLD) = 0.05 mSv

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2507
TO BE ANSWERED ON 24.11.2010

CIVIL LIABILITY FOR NUCLEAR DAMAGES ACT, 2010

2507. SHRI NEERAJ SHEKHAR:
PROF. (DR.) RANJAN PRASAD YADAV:
SHRIMATI JAYA PRADA:
SHRIMATI JAYASHREEBEN PATEL:
SHRI SHRIPAD YESSO NAIK:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government is contemplating to amend the Civil Liability for Nuclear Damage Act, 2010;
(b) if so, the details thereof and the reasons therefor;
(c) whether the Government proposes to start negotiations with various nuclear energy majors of USA and other countries as reported in the media;
(d) if so, the details thereof, country-wise; and
(e) the time by which these negotiations are likely to be concluded?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) & (b) There is no proposal of amendment of the Civil Liability of Nuclear Damage Act 2010 at present.
(c) to (e) The Central Government is taking necessary action to implement India's nuclear energy programme, including nuclear power projects in technical cooperation with other countries..
Pursuant to the agreements for cooperation in peaceful uses of nuclear energy with France, Russia and USA, commercial negotiations for setting up of nuclear power plants in India in cooperation with entities in Russia, France and USA are continuing. Negotiations with companies from Russia and France have advanced considerably.

http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2523
TO BE ANSWERED ON 24.11.2010

NUCLEAR POWER PLANTS

2523. SHRI JEETENDRA SINGH BUNDELA:
SHRI SAJJAN VERMA:
SHRI PRALHAD JOSHI:
SHRI SANJAY BRIJKISHORLAL NIRUPAM:
DR. THOKCHOM MEINYA:
SHRI HANSRAJ G. AHIR:
SHRI VILAS MUTTEMWAR:
DR. BALIRAM:
SHRI ANAND PRAKASH PARANJPE:
SHRIMATI ANNU TANDON:
SHRIMATI SHRUTI CHOUDHRY:
SHRI RAMSINH RATHWA:
SHRI OM PRAKASH YADAV:
SHRI E.G. SUGAVANAM:
Will the PRIME MINISTER be pleased to state:
(a) the details of nuclear power plants in the country with installed capacity;
(b) the actual nuclear power produced by each of these plants during each of the last three years;
(c) the per unit cost of nuclear power produced in the country;
(d) the details of countries who have helped in building these plants;
(e) whether these countries have agreed to build some more nuclear plants in the country;
(f) if so, the locations identified alongwith capacity of plants proposed to be installed there; and
(g) the progress made so far in setting up these plants and the time by which they are likely to be made functional?

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

(a)&(b) There are 19 reactors in operation in the country. In addition, four reactors [(Kaiga-4 (220 MW), KK-1&2 (2x1000 MW) and 500 MW PFBR] are under advanced stages of construction to be progressively completed in next three years. Work of four more reactors (KAPP-3&4-2x700 MW) and (RAPP-7&8-2x700 MW) has been just launched. These are slated for completion by the year 2017. The details of reactors in operation and their generation are attached as Annexure-1.

(c) The tariffs of nuclear power stations range from 94 paise per unit to 304 paise per unit. The average tariff of nuclear power in the country is about 230 paise per unit.
(d) TAPS 1&2 were set up in the year 1969, on turnkey basis by the USA and RAPS-1&2 were set up in technical cooperation with Canada. After nuclear cooperation ended in 1974, completion of RAPS-2 and setting up of additional reactors has been through indigenous effort. Kudankulam Nuclear Power Project (KK 1&2 – 2x1000 MW), presently under construction, is being set up in technical cooperation with Russian Federation.
(e) After the fruition of international cooperation in nuclear energy, enabling agreements have been concluded with the Russian Federation, France and the USA for setting up nuclear power reactors in the country.
(f) The details of sites accorded in principle approval for setting up nuclear power plants in cooperation with foreign countries are:-

Location & State	Designated country for cooperation	No. of Reactors *
Kudankulam, Tamil Nadu	Russian Federation	6 at each site
Haripur, West Bengal		
Jaitapur, Maharashtra	France	6
Kovvada, Andhra Pradesh	USA	6 at each site
Chhaya Mithi Virdi, Gujarat		

*These reactors are 1000 MW or higher unit size.
(g) The pre-project activities at these sites including land acquisition at the new sites of Andhra Pradesh and Gujarat are in progress. The plan is to commence work at above sites towards end of XI Plan / beginning of XII Plan in a phased manner on the basis of setting up of two reactors in each phase at a site, with a lag of about three to four years between phases. The expected gestation time of these reactors is six years.

Annexure-1

Generation in Million units

Location & State	Units	Capacity in MW	Generation (Million Units)		
			2007-08	2008-09	2009-10
Tarapur, Maharashtra	TAPS-1	160	1312	1007	1199
	TAPS-2	160	1239	1349	1251
	TAPS-3	540	2668	1922	2787
	TAPS-4	540	2120	2030	2754
Rawatbhata, Rajasthan	RAPS-1	220	0	0	0
	RAPS-2	200	327	0	950
	RAPS-3	220	1239	1156	1277

	RAPS-4	220	1103	1303	1143
	RAPS-5	220	-	-	301
	RAPS-6	220	-	-	3
Kalpakkam, Tamilnadu	MAPS-1	220	730	732	938
	MAPS-2	220	1019	785	1108
Narora, Uttar Pradesh	NAPS-1	220	83	740	818
	NAPS-2	220	591	0	0
Kakrapar, Gujarat	KAPS-1	220	904	259	0
	KAPS-2	220	1126	954	1068
Kaiga, Karnataka	KAIGA-1	220	1050	1157	1011
	KAIGA-2	220	1036	1079	1111
	KAIGA-3	220	409	452	1112

Notes:
RAPS-1 shutdown from 09.10.2004 for review of continuation of operation.
RAPS-5 started commercial operation on 04.02.2010.
RAPS-6 started commercial operation on 31.03.2010.
NAPS-1shutdown for EMCCR from 01.11.05 to 24.02.2008.
KAIGA-3 commenced commercial operation on 06.05.2007.
NAPS-2 is shutdown for EMCCR from 18.12.2007 to 06.09.2010.
KAPS-1 is shutdown for EMCCR since 01.07.2008.
RAPS-2 1shutdown for EMFR from 02.07.2007 to 31.08.2009.

(http://www.dae.nic.in/writereaddata/ls241110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO: 138
TO BE ANSWERED ON 18/11/2010

IMPORT OF URANIUM

*138. SHRI DHIRAJ PRASAD SAHU:
Will the PRIME MINISTER be pleased to state:
(a) whether Government has signed any agreement with foreign countries to ensure regular supply of uranium to the nuclear reactors in the country;
(b) if so, the details thereof, country-wise;
(c) whether Government proposes to import uranium from Australia, which is the largest producer of uranium; and
(d) if so, the quantity of uranium imported from Australia during the last three years?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS. (SHRI V. NARAYANASAMY) :
(a) to (d) A statement is placed on the table of the House

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.138 DUE FOR ANSWER ON 18.11.2010 BY SHRI DHIRAJ PRASAD SAHU REGARDING IMPORT OF URANIUM
(a) Yes, Sir.

(b) Contracts have been signed with France, Russia and Kazakhstan for supply of Uranium. The details of the contracts are detailed below :-

Sr No	Country	Details of contract
1.	France	300 MT of Uranium Ore Concentrates
2.	Russia	2000 MT Natural Uranium Oxide Pellets spread over a period of five to six years starting from the year 2009; and One time supply of 58 MT of enriched Uranium Dioxide Pellets
3.	Kazakhstan	2100 MT of Natural Uranium Ore Concentrate, spread over six years starting from the year 2009

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.931
TO BE ANSWERED ON 18.11.2010

DELAY IN WORKING OF FBR

931. SHRI MANGALA KISAN:
Will the PRIME MINISTER be pleased to state:
(a) whether India's first Fast Breeder Reactor (FBR) for commercial nuclear energy generation is likely to be delayed;
(b) if so, the reasons for the delay; and
(c) the time by which this would be made operational?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) Yes, Sir.
(b) The first commercial Fast Breeder Reactor being built in India is an advanced technology reactor built with indigenous resources. The materials, specifications and the dimensions of equipment are unique and several developments were taken up concurrently with project implementation. Indian industries found it challenging to achieve the tolerances and the stringent specifications. Industries had to develop several new machine tools and develop new procedures to meet the design specifications. Development of new machine tools and procedures required more time than envisaged.
(c) The reactor will be operational in year 2013.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.932
TO BE ANSWERED ON 18.11.2010

AGREEMENT WITH FRANCE FOR NUCLEAR REACTORS

932. SHRIMATI GUNDUSUDHARANI:
Will the PRIME MINISTER be pleased to state:
(a) whether an agreement with France has been entered into for setting up of two 1650 MW reactors recently;
(b) whether any time-frame has been fixed for commissioning of the above projects; and
(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)to(c) Yes Sir. An Inter-Governmental Agreement (IGA) between India & France was signed on 30th September, 2008. IGA, inter-alia provided for construction of six 1650MW reactors. Pursuant to that, a Memorandum of Understanding (MoU) for setting up of 6 x 1650 MW Light Water Reactors (LWRs) in a phased manner at Jaitapur in Maharashtra has been entered into between Nuclear Power Corporation of India Limited (NPCIL) and AREVA, France on 4th February, 2009. The negotiations on techno-commercial offer are in final stage. The work on first set of twin reactor is expected to commence in the year 2012 with a completion period of the about six years.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.933
TO BE ANSWERED ON 18.11.2010

COMMISSIONING OF REACTOR IN KUDANKULAM NUCLEAR POWER PLANT

933. SHRIMATI KANIMOZHI:
Will the PRIME MINISTER be pleased to state:
(a) whether the scheduled commissioning of the first reactor in the Kudankulam Nuclear Power Plant has been delayed to March, 2011;
(b) if so, the reasons for the delay;
(c) whether this is likely to affect the scheduled commissioning of the second reactor;
(d) if so, the details thereof; and
(e) the steps taken by Government to remedy the impact of this delay?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a) The construction activities of Unit-1 of Kudankulam have been completed. This unit is under advance stage of commissioning. Commissioning of electrical, water system & other auxiliary systems have been completed. Commissioning of reactor is in hand. The criticality procedure starting with fuel loading & subsequent testing of power operation are planned from December 2010 onwards.
(b) The delay in the project schedule has been on account of delay in sequential supply of equipment / components from Russian Federation.
(c) Yes sir.
(d) The second reactor (Unit-2) will be commissioned after a gap of 8-10 months after commissioning of first reactor (Unit-1).
(e) The matter regarding supplies of equipment has been taken up with Russian Federation at the highest levels of Governments. There has consequently been an improvement in the supplies.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.934
TO BE ANSWERED ON 18.11.2010

REDUCING THE PLF OF NUCLEAR POWER PLANTS

934. SHRI DHIRAJ PRASAD SAHU:
Will the PRIME MINISTER be pleased to state:
(a) whether the Plant Load Factor (PLF) of Nuclear Power Plants has come down to 60 per cent during the current year;
(b) if so, the details thereof and the reasons therefor; and
(c) the steps taken or being taken by Government to meet the fuel shortage?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) No, Sir. The Plant Load Factor (PLF) of nuclear power plants has gone up from 50% in the year 2008-09 to 61% in the year 2009-10 and further improved to 64% in the period April – October of the current year. The increase has been possible with improvement in domestic fuel supply and import of fuel for reactors under safeguards.
(c) The Government is making efforts to augment domestic fuel supplies by opening of new mines and processing facilities.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.312
TO BE ANSWERED ON 11.11.2010

TARGET FIXED FOR NUCLEAR POWER

312. SHRI NARENDRA KUMAR KASHYAP:
Will the PRIME MINISTER be pleased to state:
(a) the details of targets fixed for generation of nuclear power during the Eleventh Plan, plant-wise;
(b) the details of targets achieved during the first three years of Eleventh Plan since 2007;
(c) whether the country is short of nuclear power generation;
(d) if so, the details thereof, plant-wise; and
(e) the steps taken by Government to increase nuclear power generation in the country?

ANSWER
THE MINISTER OF STATE FOR PLANNING AND PARLIAMENTARY AFFAIRS (SHRI V NARAYANASAMY):
(a)&(b) The details are attached as Annexure-1
(c) There are nineteen reactors (4560 MW) in operation.
- Seven reactors (1400 MW) are under International Atomic Energy Agency Safeguards and use imported uranium. These reactors operate at full capacity.
- Ten reactors (2840 MW) use domestic uranium which is not available in the required quantity. These are operated at reduced power levels.
- One reactor (RAPS-1) is under long term shutdown.
- One reactor KAPS-1 (220 MW) after completion of Renovation & Modernisation is awaiting fuel for restart.

(d) The details are attached as Annexure-2.
(e) The government is making efforts to augment domestic fuel supplies by opening of new mines and processing facilities. The shortage of domestic uranium is expected to be overcome progressively in about two years. In addition, nuclear power generation is expected to increase with completion of projects presently at an advanced stage of construction.

Annexure-1

Station	XI Plan Target (MU		Actual Generation in first three years of XI Plan
	Original	MTA	
Tarapur Atomic Power Station	40108	39555	21640
Rajasthan Atomic Power Station	32953	24057	8801
Madras Atomic Power Station	12853	10773	5313
Narora Atomic Power Station	10717	7239	2232
Kakrapar Atomic Power Station	10422	8855	4311
Kaiga Generating Station	24367	18297	8418
Kudankulam Power Station	29784	15832	0
PFBR, Kalpakkam	2190	0	0
TOTAL	163394	124608	50715

LOK SABHA

UNSTARRED QUESTION NO.384

TO BE ANSWERED ON 10.11.2010

SHRI YASHWANT SINHA:

Q.384 NUCLEAR WEAPON

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the Washington based Institute for Science and International Security has reported on the basis of newly obtained satellite imagery a step-up in the pace of nuclear weapons development activity in Pakistan; and
(b) if so, the reaction of the Union Government thereto?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) Yes, the Government has seen report of Institute of Science and International Security, Washington regarding Pakistan's activities relating to its nuclear weapons programme.

(b) The Government continuously monitors all developments having a bearing on national security and takes all necessary steps to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516663)

LOK SABHA
UNSTARRED QUESTION NO.322
TO BE ANSWERED ON 10.11.2010
SHRI VILAS MUTTEMWAR:

Q.322 CHINA-PAK NUCLEAR DEAL

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the Government is aware that China is transferring ring magnet to Pakistan for making nuclear weapons;
(b) if so, the reaction of the Government thereto;
(c) whether the Government has held any talks with China in this regard; and
(d) if so, the reaction of China thereto?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS(SHRI S.M. KRISHNA)

(a) to (d) Government is aware of China-Pakistan nuclear cooperation. India's concerns in this regard have been clearly conveyed to the Chinese side. The Chinese government has stated that its cooperation with Pakistan in nuclear energy is for peaceful purposes. Government keeps a constant watch on all developments having a bearing on India's national interest and takes all necessary measures to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516652)

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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
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	NIL		
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	161.88 cr.

		Concentrate	

(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 448
TO BE ANSWERED ON 10.11.2010

PRODUCTION OF NUCLEAR ENERGY

448. SHRI RAMSINH RATHWA:
DR. KIRIT PREMJIBHAI 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):
(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.

(http://www.dae.nic.in/writereaddata/ls101110.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3191
TO BE ANSWERED ON 26.08.2010

INSTALLATION OF ATOMIC PLANTS

3191. SHRI RAJIV PRATAP RUDY:
Will the PRIME MINISTER be pleased to state:
(a) Government's estimates of energy per unit cost from atomic energy;
(b) whether Government has done any study to support the trends in the new installations of atomic energy in the developed world;
(c) whether it is also a fact that the developed countries have stopped installing any atomic plants;
(d) whether India is being treated as one of the most desired destinations for the nuclear suppliers; and
(e) if so, the details thereof?
THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PERNSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
(a) The per unit cost of energy from nuclear power stations are given in the statement as compared with fossil fuel based power stations.

(b)&(c) Energy demand in many of the economically developed countries is not rising appreciably. At the same time capacity factors of nuclear power stations have shown substantial improvements and the life of nuclear power stations have increased considerably. Due to these factors, the necessity of building new nuclear power stations have not risen in many developed countries. New constructions have started in Finland, France, Russian Federation, Japan, Korea, China and USA.
(d)&(e) India is one of the countries where the planned growth in the nuclear energy generation is quite large. Technological maturity, availability of trained manpower, well established regulatory mechanism and absence of proliferation concerns have enabled India to engage in International Civil Nuclear Cooperation.

Annexure

Table Tariffs (2008-09) of Nuclear & other nearby stations

Region/Power Station	Fuel	Tariff(Paise/kWh)
Northern Region		
NAPS, Narora	Nuclear	188
RAPS 2 to 4, Rawatbhata	Nuclear	271
RVVNL Thermal	Coal & Gas	277
NTCPP, Dadri	Coal	254
CCCP, Dadri	Natural Gas	351
Western Region		
TAPS 1 & 2	Nuclear	94
TAPS 3 & 4	Nuclear	273
KAPS, Kakrapar	Nuclear	214
Reliance Infra, Dahanu	Coal	211
Tata Power, Mumbai	Multifuel	544
Nashik TPS, Nashik	Coal	259
Ukai TAPS, Ukai	Coal	195
Gandhar CCCP	Natural Gas	464
Southern Region		
Maps, Kalpakkam	Nuclear	188
Kaiga 1 to 3	Nuclear	297
NLC, Neyveli	Lignite	190
Raichur TPS	Coal	285
Bellary TPS	Coal	321

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3192
TO BE ANSWERED ON 26.08.2010

SETTING UP OF NUCLEAR POWER PLANTS

3192. SHRI RAMDAS AGARWAL:
Will the PRIME MINISTER be pleased to state:
(a) the number of nuclear power plants proposed to be set up during the current five year plan period indicating likely investment and location of each such plant;
(b) the expected production capacity and by when such Nuclear plants would start producing power, plant-wise;
(c) whether Government has so far signed any Civil Nuclear Agreement with USA for supply of uranium and transfer of reprocessing technology, if so, the details of terms and conditions of such agreements; and
(d) the fields in which uranium and such technology would be utilized?

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) In addition to four nuclear power reactors (2720 MW) under advanced stage of completion and four reactors (2800 MW) on which work has been just launched, the Mid Term Appraisal of the XI plan envisages commencement of work on six plants during the current plan.
The details are as follows:

Capacity (MW)	Location District/State	Outlay in XI Plan (Rs.in Crore)
2 x 1000	Tirunelveli, Tamilnadu	1653
2 x 1650	Ratnagiri, Maharashtra	1411
2 x 1000*	Srikakulam, Andhra Pradesh	851
2 x 1000*	Bhavnagar, Gujarat	850
2 x 700	Fatehabad, Haryana	101
2 x 700	Mandla, Madhya Pradesh	101

The plants will start producing power in about six years from start of work.
(c)&(d) The `Agreement for Cooperation between the Government of India and the Government of the United States of America Concerning Peaceful Uses of Nuclear

Energy' was singed on 10th October 2008. According to Article 5 (2) of this Agreement, sensitive nuclear technology, heavy water production technology, sensitive nuclear facilities, heavy water production facilities and major critical components of such facilities may be transferred under this Agreement pursuant to an amendment to this Agreement. This Agreement has not been amended so far. No agreement has been signed between India and the United States on purchase of Uranium.

(http://www.dae.nic.in/writereaddata/rs260810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. 404
TO BE ANSWERED ON 25.8.2010

RADIOACTIVE MATERIALS

*404 SHRI ABDUL RAHMAN
WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) Whether the Bhabha Atomic Research Centre (BARC) has specified safe custody and disposal of radioactive materials and certain protective measures to be taken by hospitals, universities and other institutions for staff employed in the radiology departments;

(b) If so, the details thereof;

(c) Whether BARC has carried out any inspection of the radiology departments of hospitals, universities or institutions registered with BARC;

(d) If so, the details thereof and if not, the reasons therefor; and

(e) The steps taken by BARC to ensure strict compliance of its guidelines by hospitals, universities or institutions which are permitted to use radioactive materials?

A N S W E R
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) to (e) A statement is placed on the table of the House.
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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO.404 DUE FOR ANSWER ON 25.8.2010 BY SHRI ABDUL RAHMAN REGARDING RADIOACTIVE MATERIAL.

(a) The designated body for such regulatory functions is Atomic Energy Regulatory Board (AERB). AERB has specified the requirements of safe custody, protective measures during useful life and disposal of radioactive substances.

(b) The requirements of safe custody, protective measures during useful life and disposal of radioactive substances are governed by Atomic Energy (Radiation Protection) Rules-2004 and Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987. AERB specifies the requirements in its Regulatory Safety Documents. These are also specified in the Authorization issued to the institutions on a case to case basis.

(c) AERB conducts regulatory inspections of radiology departments of hospitals, universities or institutions registered as the radiation facilities licensed by it.

(d) The details of regulatory inspection of radiation facilities carried out in 2009 are as follows:

Table 1: Regulatory Inspections of radiation facilities
(For January to December 2009)

S. No.	Facilities	Number of Inspections carried out
1.	Diagnostic X-ray	46
2.	Radiotherapy	11
3.	Nuclear Medicine	41
4.	Industrial Radiography	57
5.	Gamma Irradiators	15
6.	Nucleonic Gauges	07

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(e) AERB implements the following steps to ensure the regulatory compliance by the facilities (hospitals, universities and institutions) which are permitted to use radioactive material.

- Periodic routine regulatory inspections
- Surprise inspections
- Review of the periodic safety status reports submitted by the facilities.
- Carry out investigations of any unusual occurrences and exposures.
- Safety performance appraisals of the facility while renewing its license
- Motivate the personnel of the facility for improving the radiation protection safety culture by way of awareness programmes.

DEPARTMENT OF ATOMIC ENERGY
NOTE FOR SUPPLEMENTARIES

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA STARRED QUESTION NO.404 DUE ON 25.8.2010 BY SHRI ABDUL RAHMAN REGARDING RADIOACTIVE MATERIAL
PART I

EXECUTIVE SUMMARY

The Atomic Energy Act, 1962, provides for the development, control and use of atomic energy for the welfare of the people of India and for other peaceful uses and for matters connected with. The Atomic Energy Act provides the basic regulatory framework for all activities related to Atomic Energy Programme and use of ionizing radiation in India. Pursuant to the Atomic Energy Act the Chairman, Atomic energy Regulatory Board, designated by the Central Government; is the Competent Authority for granting, renewal, withdrawal and revocation of consents for Nuclear and Radiation Facilities. The AERB also exercises control over nuclear installations and the use of radioactive substances and radiation generating plants outside such installations.

The Atomic Energy Regulatory Board, exercises the powers conferred in the Act, to enforce among other rules, the Atomic Energy(Radiation Protection) Rules, 2004 and the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules 1987 .

The Atomic Energy (Radiation Protection) Rules, 2004, prescribes the requirements for the licensing related with the use of radioactive sources, radiation surveillance, trained man power and appointment of Radiological Safety Officers etc. AERB also publishes relevant documents such as Safety Codes, Guides and Manuals; and enforces regulatory activities in accordance with them. These rules and regulatory safety documents provide adequate guidance to the facilities for taking safety measures such that no untoward incident with respect to radiological safety takes place.

AERB also enforces the safe disposal of the radioactive waste by the users/facilities in accordance with applicable provisions of the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules 1987. The prime responsibility for ensuring the safe and secured custody, transport, use, and disposal lies with the user/facilities.

The AERB controls DAE facilities (which are not under BARC) and non-DAE radiation facilities such as diagnostic x-rays, nuclear medicine, radiotherapy, gamma irradiators, industrial radiography and nucleonic gauges etc.

In accordance with Section 17 of the Act, AERB also carries out periodic and surprise inspections in these facilities to ensure the regulatory compliance by the users (facilities). Any discrepancy/non-compliance by the users/facilities is subjected to regulatory actions by AERB including penal action such as suspension of license in case of intentional/deliberate violations.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA STARRED QUESTION NO.404 DUE ON 25.8.2010 BY SHRI ABDUL RAHMAN REGARDING RADIOACTIVE MATERIAL
PART II

DETAILED NOTE FOR SUPPLEMENTARIES

Any radioactive material becomes a radioactive waste after its useful lifetime is over. The radioactive wastes generated from the hospitals, research establishments and other institutions are of two types, viz, sealed and unsealed (open) sources. Once these sources become unusable, they are known as disused sources. These disused sources need to be safely disposed off as mandated by the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987,G.S.R 125, which are promulgated under the Atomic Energy Act, 1962. Such safe disposals are done as per the procedures stated below:

I) Safe disposal of sealed disused sources

For reasons of safety and security, any disused source needs to be be disposed off safely. The disused sources may be of foreign origin or supplied indigenously.
(a) Disused sources of foreign origin

Any imported source, after the useful life-time is over, is sent back to the supplier abroad for safe disposal. Information on such disused sources is known to AERB through its records and the mandatory periodic safety status received from the user (licensee) or at the time of periodic inspection. Once such disused sources are identified the user (licensee) is advised to arrange for safe disposal in the country of origin. Such sources are exported back to the supplier only after completing all the regulatory procedures ensuring that the source is safe for transport. The user is required to intimate to AERB once the export of the disused source is complete.
However, in some cases, particularly for sources imported long ago, the user is not able to export the source for safe disposal. In such cases, AERB
helps the user to dispose off the disused sources at any authorized waste management agency in the country after completing all the regulatory formalities.
(b) Disused sources of indigenous supply

As mentioned above once a disused source is known to be lying in the facility, the user is advised to arrange transport of the source for safe disposal to the domestic supplier. Such transport for safe disposal to the domestic supplier is done after completing the required regulatory procedures. Once the disused source is safely received by the domestic supplier for safe disposal, intimation is sent to AERB.

II) Safe disposal of unsealed sources

Unsealed sources are mostly in liquid form and disposed off locally by the standard methods, viz, a) dilute and disperse and b) delay and decay. The above methods are adopted based on the activity concentrations (activity per unit volume) limits as given in the Rules.

Normally the liquid wastes generated in medicine, industry and research comprise of short half life radionuclides. The quantities and activity content of the generated waste is also small. These wastes are disposed off either by dilution and dispersion or are stored till their activity decays to an acceptable level for discharge. Unsealed sources with longer half-life need special attention for their disposal after use. Wastes containing such sources are diluted to levels below the authorized limits for disposal and discharged to the environment.
In all the above cases, authorization for disposal is required to be obtained from AERB as per the aforesaid rules.

III) The relevant rules from the Atomic Energy (Safe Disposal of Radioactive Waste) Rules that govern the disposal of radioactive waste are given below:

Rule 3: Restrictions on the disposal of radioactive waste – No person shall dispose of radioactive waste –
(a) unless he has obtained an authorization from the competent authority under these rules;
(b) in any manner other than in accordance with the terms and conditions specified in the authorisation issued under these rules;
(c) in any location different from those specified in the authorisation;
(d) in quantities exceeding those specified in the authtorisation.

Rule 4: Application for authorisation – Each application for authorisation to dispose of or transfer radioactive waste shall be made (save as provided in rule 15) in Form I and shall include –
(i) brief description of –

(a) the process, materials and equipment generating radioactive wastes in the installation;
(b) the equipment and systems provided in the waste generating installation to monitor and control the radioactive wastes and to reduce environmental releases;
(c) the environment around the installation;
(d) the processes and equipment in the installation for conditioning treatment and disposal of radioactive waste and the staff employed for the purpose;
(e) safety devices incorporated in the waste disposal installation to contain the radioactive effluents and control their release to unrestricted areas during normal operations, including anticipated operational occurrences and to keep these releases As Low As Reasonably Achievable (ALARA);
(f) an estimate of the amounts of annual releases, discharges and leakages from radioactive waste repositories during normal condition and an analysis of their anticipated environmental impact;
(g) an analysis of potential accidents which may occur in the installation and design features and monitoring equipment incorporated in the waste disposal installation to control the release of radioactivity in the event of such accidents;
(h) procedures to be followed for safe collection of radioactive wastes arising from such accidents; and

(i) design features of surveillance equipment incorporated or otherwise provided in and around the waste disposal installation to monitor the normal releases of activity and those released in the event of an accident;
(ii) estimates of quantities of each of the principal radionuclides expected to be released in the environment annually (in solid, liquid and gaseous form) during normal operations;
(iii) any other information which the competent authority may deem necessary to evaluate the safety status of the waste disposal operations.

Rule 5: Issuance of authorisation - The competent authority shall issue authorisation in Form II where it is satisfied that the applicant has complied with the requirements of rule 4.

Rule 7: Maintenance of Records of Waste Disposal – Every authorised person shall maintain records of disposal of radioactive waste giving the following particulars-
(a) the description, quantity, physical state, chemical characteristics and the date of disposal of each consignment of radioactive waste;
(b) mode of disposal, concentration of radioactive material in the waste disposed of and site of disposal;
(c) names of the workers and the radiological safety officers associated with the disposal of the radioactive waste;
(d) data on periodic radiation surveillance in and around the site of ` the disposal of radioactive waste as specified in the authorisation;
(e) any other information which the competent authority deems necessary.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA STARRED QUESTION NO.404 DUE ON 25.8.2010 BY SHRI ABDUL RAHMAN REGARDING RADIOACTIVE MATERIAL
PART III

ANTICIPATED QUESTIONS & ANSWERS

1. The steps being taken by Government so that incidents like Mayapuri do not occur in the future?

Ans: Several actions have been taken by AERB and DAE as well as other departments and ministries to prevent such incidents. Some of the steps taken are:

- Installation of radiation detection systems at entry/exit of airports, sea-ports, inland container depots and other land ports.
- Further efforts to bring legacy sources (which may have been in existence from periods when regulatory controls were still in the evolving stage) under regulatory control by scanning old records.
- Updating the inventory of sources based on inputs from
  - Ministry of HRD / UGC
  - Ministry of Health
  - Ministry of Industries
  - Coal Authority of India Ltd.
  - Oil and Natural Gas Commission
  - Source suppliers and
  - Response to advertisements issued in newspapers

- Increase in the number of awareness programmes pertaining to radiation safety in various areas in the country. Members of scrap association have been sensitized to monitor the scrap for radiation. On May 6, 2010 AERB organized an awareness programme for scrap dealers and workers of Mayapuri scrap market. In this program, more than 150 participants were familiarized with the use of radiation monitors.
- The requirement of pre-shipment inspection certificate for consignments imported to India declaring that they do not contain any type of hazardous, toxic waste, radioactive contaminated waste has been notified by concerned minsitry.
- Enhanced regulatory control by increasing frequency of inspections and establishment of Regional Centres by AERB.

2. Whether the Atomic Energy Regulatory Board(AERB) has received any requests from universities, institutions, hospitals and other departments for inspection or assistance for disposal of their radioactive waste?

Ans: Yes sir, such requests are received by AERB periodically.

3. If so, the details there of ?

Ans: From January 2009 to June 2010, AERB has issued around 400 authorizations to various universities, institutions, hospitals etc for safe disposal of radioactive wastes under the provisions of the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987. The safe waste disposal mechanism is based on the physical and chemical form, activity content and half life, water solubility, combustibility etc of the waste. After careful review of the above characteristics AERB allows the safe disposal either at the site of installation itself or an authorized National waste disposal facility. Appropriate transport regulations prescribed by AERB are also enforced during the transport of the radioactive waste prior to their safe disposal.

4. Whether Government has not formulated any policy on radiation so far due to which biomedical and radioactive waste is not being disposed off properly by hospitals and other agencies; and

Ans: The Atomic Energy (Radiation Protection) Rules, 2004 and the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987 framed under the Atomic Energy Act, 1962 lay down the radiation safety requirements.

5. Whether the Atomic Energy Regulatory Board has investigated the Mayapuri incident?

Ans: Yes, Sir.

6. If so, the outcome there of?

Ans: The incident was investigated by AERB and Delhi police. Based on the investigations, it was established that the radioactive Co-60 sources recovered from the Mayapuri scrap market in Delhi were part of an old gamma cell belonging to the Chemistry Dept of Delhi University. This cell was procured by the Chemistry Dept of Delhi University in 1969 from Atomic Energy Canada Ltd and was being used by a Chemistry professor till he retired. Since then it remained disused for more than 15 years till it was auctioned by the Delhi University in Feb 2010 and reached the hands of the scrap dealer who purchased it through this auction.

Dismantling of the gamma cell by local workers at the metal scrap shop led to the highly radioactive Co-60 pencil sources coming out of its cage. The extended stay near the sources by the workers unknowingly, caused unwarranted high exposure to 7 persons with radiation induced symptoms of whom one succumbed to radiation sickness.

The unauthorized disposal of the gamma cell by the Delhi University as a scrap was in violation of the Atomic Energy (Safe Disposal of Radioactive Waste) Rules, 1987 and the Atomic Energy (Radiation Protection) Rules, 2004. In view of this, AERB issued a show cause notice to the Delhi University and in the interim, advised the university to suspend forthwith all activities involving the use of radiation sources. The preliminary response submitted by the University is currently under review by AERB.

7. Whether it is proposed to install radiation monitor portals at all the ports and entry points in the country to control any kind of leakage as has happened in the Delhi's scrap market;

Ans: Yes, sir.

8. Whether adequate arrangements have been made for the disposal of nuclear wastes from hospitals, research establishments and other sources in the country.

Ans: Yes, sir.

9. If so, the details thereof?

Ans: The radioactive wastes generated from the hospitals, research establishments and other institutions are safely disposed off as per provisions given in Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987.

The radioactive sources used in these establishments are either sealed sources such as those used for radiotherapy or unsealed sources such as those used in nuclear medicine.
As per the requirement of Atomic Energy Regulatory Board (AERB), the sealed sources after they become unusable; have to be returned to the original supplier for disposal. For transport of these sources from user to supplier, authorization from AERB is needed to ensure safety during transport. Once the transport is complete it is necessary to inform to AERB. In some cases, particularly when the source has been supplied long ago by a foreign supplier, it may not be possible to return it as required. In such cases, AERB helps the user for disposal of the source to an authorized waste management agency.
The unsealed sources used in medicine and research are mostly in liquid form, have short half-life and are used in small quantities. These sources after their use are disposed off either by dilution and dispersion or are stored till their activity decays to an acceptable level for discharge. Unsealed sources with longer half-life need special attention for their disposal after use. Wastes containing such sources are diluted to levels below the authorized limits for disposal and discharged to the environment.
In all the above cases, authorization for disposal is required to be obtained from AERB as per the aforesaid rules.

(http://www.dae.nic.in/writereaddata/lssq404_250810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. * 418
TO BE ANSWERED ON 25.08.2010

ENVIRONMENT CLEARANCE FOR ATOMIC POWER PLANTS

*418. SHRI MANISH TEWARI:
Will the PRIME MINISTER be pleased to state:
(a) whether the four nuclear plants proposed by the Nuclear Power Corporation of India Limited (NPCIL) at Fatehabad, Mandla, Srikakulam and Bhavnagar have not been given a green signal to even secure the terms of reference for conducting an Environmental Impact Assessment (EIA) study because of shoddy documentation;
(b) if so, the details thereof;
(c) whether there is stiff resistance from the local inhabitants to the location of the Nuclear Power Plants (NPPs);
(d) if so, the details thereof;
(e) whether NPCIL officials who went to collect soil samples in Bhavnagar in Gujarat were physically prevented by officials from doing so;
(f) if so, the details thereof; and
(g) the time by which the EIA of these and other sites for NPP is sought to be commenced?

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) to (g) A statement is laid on the Table of the House

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. 418 FOR ANSWER ON 25.08.2010 BY SHRI MANISH TEWARI REGARDING ENVIRONMENT CLEARANCE FOR ATOMIC POWER PLANTS.

(a) & (b) NPCIL had submitted applications for approval of Terms of Reference (TOR) for Environment Impact Assessment (EIA) Studies for the sites in Fatehabad, Haryana; Mandla, Madhya Pradesh; Srikakulam, Andhra Pradesh; and Bhavnagar, Gujarat to the Ministry of Environment & Forests (MoEF). The TORs are to be approved by the Expert Appraisal Committee (EAC) of MoEF. EAC after review of the submissions of NPCIL has advised NPCIL to provide additional details on land use and environmental setting of site. Each of the projects has an associated township for the employees. EAC also advised that TORs for township be also submitted along with projects so that both can be approved together. The revised TORs, as advised by EAC have been submitted to MoEF in respect of Haryana project. In respect of the other three projects, the township location and other details are being finalized with the respective state governments, after which the revised TORs will be submitted for approval of MoEF.
(c) No, Sir.
(d) Does not arise.
(e)&(f) NPCIL has awarded geo technical investigations for the site at Bhavnagar to Gujarat Power Corporation Limited (GPCL). GPCL team was prevented from collecting soil samples by the local villagers at the site on June 6, 2010. The issue has been taken up with State Government and work is expected to resume soon.
(g) The EIA work on the sites is expected to be started in the year 2010 progressively for all sites after approval of respective TORs by MoEF.

(http://www.dae.nic.in/writereaddata/lssq404_250810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4609
TO BE ANSWERED ON 25.08.2010

JOINT VENTURE BETWEEN NPCIL AND NTPC

4609. SHRI SOMEN MITRA:
Will the PRIME MINISTER be pleased to state:
(a) whether Nuclear Power Corporation of India Limited (NPCIL) has entered into any agreement with National Thermal Power Corporation (NTPC) to form a joint venture to set up nuclear power plants in the country;
(b) if so, the details thereof, location wise;
(c) the States where these nuclear power plants are proposed to be set up and their expected production capacity; and
(d) the total funds required for these power plants?

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)to(d) While an agreement for formation of a Joint Venture Company (JVC) for setting up nuclear power reactors has been signed between NPCIL & NTPC, the JVC is yet to be incorporated. The details regarding site, project, funds etc. will be finalised after incorporation of the JVC.

(http://www.dae.nic.in/writereaddata/ls250810.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4639
TO BE ANSWERED ON 25.08.2010

SCRUTINY OF NUCLEAR PLANTS

4639. SHRIMATI SUPRIYA SULE:
Will the PRIME MINISTER be pleased to state:
(a) whether the Union Government proposes to open up "core areas" of nuclear power plants for scrutiny by foreign insurance companies so that insurance coverage can be extended to these critical sections;
(b) if so, the time by which a final decision in this regard is likely to be taken;
(c) the main reasons for opening up these core sectors to the foreign insurance companies; and
(d) the benefits likely to accrue as a result 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):
(a) No, Sir.

(b) to(d) Does not arise

(http://www.dae.nic.in/writereaddata/ls250810.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4722
TO BE ANSWERED ON 25.08.2010

POKHARAN NUCLEAR TEST

4722. SHRI YOGI ADITYA NATH:
Will the PRIME MINISTER be pleased to state:
(a) whether some scientists have recently expressed doubt regarding the success of Pokharan test conducted in 1998;
(b) if so, the details thereof; and
(c) the reaction of the Government in this regard?

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) Yes, Sir.

(b) & (c) In the recent past certain scientists in the country did raise some doubt

about the success of the thermo-nuclear test carried out by India in 1998. However, the Atomic Energy Commission (AEC) after examining the issue in detail has released a statement confirming achievement of 50 + 10 KT, yield in the thermo-nuclear Pokhran-II test carried out in 1998.

(http://www.dae.nic.in/writereaddata/ls250810.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4756
TO BE ANSWERED ON 25.08.2010

APPROVAL FOR NUCLEAR PLANT

4756. SHRI SOMEN MITRA:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has accorded in principle approval for setting up of nuclear plant in Haripur in West Bengal;
(b) if so, the steps taken by the Government to acquire land for the purpose;
(c) the compensation package worked out by the Government in this regard; and
(d) the time by when the plant is likely to be operationalised?

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) Yes.Sir
(b)to(d) The state government has advised a calibrated approach in this regard and as a first step, public awareness activities only have been taken up. The compensation, Resettlement & Rehabilitation Package and land acquisition are yet to be discussed with the state government. Nuclear Power Corporation of India Limited (NPCIL) is closely interacting with Government of West Bengal for taking up pre-project activities including land acquisition at the site so as to start work on first two reactors in the year 2012. The completion period for the first set of reactors is six years.

(http://www.dae.nic.in/writereaddata/ls250810.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4800
TO BE ANSWERED ON 25.08.2010

HANDLING OF RADIOACTIVE MATERIALS

4800. SHRI BASUDEB ACHARIA:
SHRI K.C. VENUGOPAL:
SHRI SHATRUGHAN SINHA:
SHRI JAI PRAKASH AGARWAL:
DR. RATTAN SINGH AJNALA:

Will the PRIME MINISTER be pleased to state:

(a) whether the workers engaged in the nuclear plants and facilities as well as those handling radioactive materials directly or indirectly, knowingly or unknowingly, are the first victims of the radiation;
(b) if so, the reaction of the Government thereto;
(c) the details of accident cases, noticed during the last two years related to nuclear energy waste; and
(d) the amount spent by the Government on disposal of nuclear waste in the country during the said period?

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) By virtue of their proximity to radioactive materials and nature of work, the workers engaged in the nuclear plants and facilities do have a potential for exposure to radiation. Recognising this, a number of safety measures (both engineered and administrative) and controls are built into these plants and facilities with the objectives of avoiding accidental exposures to any worker or other personnel.The plants and facilities are designed, constructed and operated such that entry to highly radioactive areas is not allowed during unit operation. The built in safety of the nuclear power plants with defense in depth features, radiation shielding provision, stringent operating requirements, adequate & continuous radiological safety surveillance and strict compliance to radiation protection procedures by individual workers at work radiation exposure is received by occupational worker allowed only for trained and qualified persons. Also, adequate emergency preparedness and response mechanism enforces the relevant rules and practices with respect to radiation protection at these plants and facilities. No worker is allowed an internationally allowed limits which confirms to be safe from any impact on health of person. Radiation workers are regularly monitored.

By the above measures, there is no undue risk to the radiation workers in Nuclear Power Plants and facilities.
(c) There has been no accident cases related to radioactive waste in Nuclear fuel cycle facilities in last two years.

(d) The cost of disposal of nuclear waste involves storage, segregation, transportation, volume reduction, treatment and disposal. In the country, the nuclear waste is disposed at the nuclear installation itself. In a twin 220 MWe PHWR reactor about 50-60 m3 of radioactive solid waste is disposed off annually. Also, about 30, 000 M3 of liquid effluent are treated to remove bulk of the radioactivity. The remaining effluents which are virtually free from activity are discharged annually after monitoring within the limits set by the regulatory authorities. The annual cost of disposal of waste at a reactor site is about Rs.55 lakhs on solid waste and about 40 lakhs on liquid waste.

(http://www.dae.nic.in/writereaddata/ls250810.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2727
TO BE ANSWERED ON 19.08.2010

SECOND STAGE DEVELOPMENT OF ATOMIC ENERGY

2727. SHRI KANJIBHAI PATEL:
Will the PRIME MINISTER be pleased to state:
(a) whether Government is pursuing implementation of second stage development of Atomic Energy as envisaged by Dr. Bhabha;
(b) if so, the details of achievements made in this regard;
(c) whether second stage development is as per the time plan of 2011-12;
(d) if so, whether Government intends to switch over to the third stage development programme by 2013;
(e) if not, the reasons therefor and extended time-frame for the second stage;
(f) whether any time-frame has been set for third stage development; and
(g) 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):
(a) Yes, Sir.
(b) The second stage of Indian nuclear power programme envisages development of fast breeder reactors using plutonium-based fuel. The Department of Atomic Energy initiated technology development for liquid metal fast breeder reactors decades back. The Reactor Research Centre (RRC), later renamed as Indira Gandhi Centre for Atomic Research (IGCAR) was set up in 1969 at Kalpakkam in Tamilnadu for this purpose. An experimental 40 MWt Fast Breeder Test Reactor (FBTR) is in operation in IGCAR since October 1985. The reactor has been test bed for the development of subsequent fast breeder reactors. FBTR has provided valuable experience of liquid metal fast breeder technology resulting in the design of the 500 MW Prototype Fast Breeder Reactor (PFBR). The PFBR is now under construction at Kalpakkam.
(c) No, Sir. The first Prototype Fast Breeder Reactor (PFBR) is scheduled to be completed by 2012. Several Fast Breeder Reactors will be set up subsequently. Fast Reactors with metallic fuel having improved breeding ratio will then be developed.
(d) Only after sufficient inventory of U233 is generated through the operations of a large number of FBRs, the third stage power programme will be initiated.

(e)to(g) Working out a precise time frame is not possible at this moment. The third stage will be initiated when sufficient installed capacity in the second stage has been built. It is envisaged that the third stage may commence three to four decades after introduction of fast breeder reactors using fuel with shorter doubling time.

(http://www.dae.nic.in/writereaddata/rs190810.pdf#page=3%20.)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2728
TO BE ANSWERED ON 19.08.2010

RIGHT TO REPROCESS NUCLEAR FUEL

2728. SHRI RAM JETHMALANI:
SHRI RAVI SHANKAR PRASAD:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that the country has got the right to reprocess the nuclear fuel sold by the American companies as per recent agreement signed with America;
(b) if so, the facts in this regard;
(c) whether the nuclear fuel purchased under this agreement include ownership right or Government has only reprocessing right; and
(d) whether country would have to repay for reprocessing of nuclear fuel?

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) to (b) - 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. Article 6(iii) of the Agreement calls for consultations on arrangements and procedures within one year.
In March 2009 the US responded to India's request invoking Article 6(iii) of the Indo-US agreement on Arrangements and Procedures confirming that the first round of formal consultations, would commence no later than 3 August 2009 and that final agreement on Arrangements and Procedures is to be reached no later than 3 August 2010. The text has been finalized in the last round of negotiations held from 2-4 March 2010 and signed in Washington on 30 July 2010. The Arrangements and Procedures will enter into force after completion of necessary formalities.
(c)&(d) - No nuclear fuel has been purchased from USA so far under the above agreement.

(http://www.dae.nic.in/writereaddata/rs190810.pdf#page=3%20.)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2729
TO BE ANSWERED ON 19.08.2010

ACTIVITIES OF INDIAN RARE EARTHS

2729. SHRI K.N. BALAGOPAL:
Will the PRIME MINISTER be pleased to state:
(a) the major activities of Indian Rare Earths (IRE) units situated in Kollam, Kerala;
(b) the total income of IRE from sand mining from Kerala operations;
(c) whether Government has studied about the value added products which can be developed from this sand;
(d) if so, the details of the products; and
(e) whether Government would start production units to develop value added products from rare earth available in Kerala?

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) Indian Rare Earths, a Public Sector Undertaking under the Department of Atomic Energy (DAE) produces ilmenite, rutile, leucoxene, zircon, sillimanite etc. in their minerologically pure marketable forms from beach sand in its unit situated in Kollam Kerala. Part of the zircon is used for production of zirflour which is used in ceramic industry.
(b) Total income from IRE sand mining from Kerala operation was Rs. 9267.14 lakh in the year 2009-10.
(c) Yes, Sir.
(d) The value added products which can be produced from ilmenite are synthetic rutile, titanium slag, titanium sponge, titanium pigment and various titanium chemicals. Rutile & Leucoxene can be used directly to produce titanium sponge, titanium pigment and various titanium chemicals. The value added products that can be produced from Zircon are zirflour, microzir, zirconium metal and various zirconium chemicals.
(e) Yes, Sir.

(http://www.dae.nic.in/writereaddata/rs190810.pdf#page=3%20.)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2730
TO BE ANSWERED ON 19.08.2010

PROTECTION OF SCIENTISTS

2730. SHRI N. BALAGANGA:
Will the PRIME MINISTER be pleased to state:
(a) whether Government is aware that scientists from Kalpakkam Atomic Power Plant are abducted and killed;
(b) if so, the details thereof and the reasons therefor; and
(c) the steps taken/proposed to be taken by Government to protect the scientists?

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 is no incident of abduction or killing any Scientist of Madras Atomic Power Station., Kalpakkam.
(c) Adequate security arrangements have been provided both at the plant site and in the residential township at Kalpakkam.

(http://www.dae.nic.in/writereaddata/rs190810.pdf#page=3%20.)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2731
TO BE ANSWERED ON 19.08.2010

EXPLORATION OF URANIUM RESOURCES

2731. SHRI NAND KUMAR SAI:
Will the PRIME MINISTER be pleased to state:
(a) whether Atomic Minerals Directorate for Exploration and Research, (AMD),Hyderabad, has conducted airborne electromagnetic time domain surveys of uranium resources in the country during 2008-09 and 2009-10;
(b) if so, the details in this regard;
(c) the estimated quantity of uranium resources identified during the said surveys in various locations in the country; and
(d) the steps taken by Government to explore such resources?

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) Yes, Sir.
(b) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent Unit under the Department of Atomic Energy, has conducted Airborne Electromagnetic Time Domain Surveys during the year 2008-09 and 2009-10 as detailed below:

((c)&(d) The airborne surveys have been planned in a phased manner and subsequent to the same, the data evolved out of the said surveys are to be interpreted and detailed drilling activities are to be carried out to finalize the uranium occurrence. The surveys will hence help in demarcating the favourable areas for further detailed exploration by ground radiometric, geophysical and subsurface exploration. Interpretation of data acquired during 2008-09 is in advance stage of modeling and interpretation. Tasks taken up during 2009-10 are yet to be completed. The uranium potential of identified areas exhibiting conductivity anomaly will be known only after completion of subsurface exploration by drilling.

(http://www.dae.nic.in/writereaddata/rs190810.pdf#page=3%20.)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2732
TO BE ANSWERED ON 19.08.2010

LEGAL COMPULSION TO CAP NUCLEAR LIABILITY

2732. SHRI M.V. MYSURA REDDY:
Will the PRIME MINISTER be pleased to state:
(a) the extraneous legal compulsions to cap the overall liability amount at US $300 million for nuclear liability;
(b) whether the External Affairs Ministry has recommended for treating 300 million as minimum; and
(c) if so, the reasons for this Ministry for putting 300 million as maximum?

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) to (c) - The Civil Liability for Nuclear Damage Bill, 2010 was introduced in the 15th Lok Sabha on 07.05.2010. The 'Civil Liability for Nuclear Damage Bill, 2010' as introduced and pending in Lok Sabha was referred to the Parliamentary Standing Committee on Science & Technology, Environment & Forests for examination. The report of the Committee (Numbered 212) has been presented to the Rajya Sabha on 18th August, 2010 and laid on the table of the Lok Sabha on 18th August 2010.

(http://www.dae.nic.in/writereaddata/rs190810.pdf#page=3%20.)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3953
TO BE ANSWERED ON 18.08.2010

THREATS FROM TERRORIST OUTFITS

3953. SHRI YOGI ADITYA NATH:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has recently assessed the internal and external threat from terrorist outfits on our nuclear installations;
(b) if so, the outcome thereof; and
(c) the safeguards in place to meet these threats?

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) Continuous and periodic assessment of internal and external threats are made by Central & State Intelligence Agencies.

(b) Based on inputs received from Government of India/ Central Intelligence Agencies / State Intelligence Wing, security measures adopted in nuclear installations are reviewed and strengthened for effective security.

(c) Nuclear installations are under security cover of the Central Industrial Security Force with additional manpower and equipment, whenever necessary.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4014
TO BE ANSWERED ON 18.08.2010

EXPLORATION OF URANIUM RESOURCES

4014. SHRI PRADEEP MAJHI:
SHRI UDAY PRATAP SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether Atomic Minerals Directorate for Exploration and Research (AMD), Hyderabad, has carried out any survey and exploration of uranium resources in the country;
(b) if so, whether AMD proposes to conduct Airborne Electromagnetic Time Domain Survey over some identified proterozoic basins in a phased manner;
(c) if so, the details thereof, location wise;
(d) the estimated quantity of uranium resources in each of such locations; and
(e) the steps taken by the Government to explore such resources?

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) Yes, Sir.
(b) Yes, Sir.
(c) During the XI Plan Period, the Atomic Minerals Directorate for Exploration and Research (AMD), Hyderabad has envisaged to conduct Airborne Geophysical Surveys including Airborne Electro-magnetic Time Domain Survey. So far, AMD has acquired data over 85,868 line kms. departmentally as well as through outsourcing. The details are as follows:

S. No.	Locations	Survey Conducted (in line km)
1	MOHAR AREA, MADHYA PRADESH	6,500
2	ALBITITE LINE, RAJASTHAN AND HARYANA	9,946
3	BHIMA BASIN, KARNATAKA	36,021
4	KALADGI BASIN, KARNATAKA	6,453
5	SONRAI - BIJAWAR BASIN U.P. AND M.P	3,099
6	NORTH SINGHBHUM, W.B. AND JHARKHAND	8,747
7	CUDDAPAH BASIN, ANDHRA PRADESH	15,102

AMD proposes to conduct the Time Domain Electromagnetic Surveys in the areas as per the details given below:

S.No.	Locations	Area (In line km)
1.	MAHADEK BASIN, MEGHALAYA	15,000
2.	PARTS OF BHIMA BASIN, KARNATAKA	10,000
3.	SRISAILAM AND KURNOOL SUB BASIN, A.P.	10,000
4.	NORTH&SOUTH SINGHBHUM, JHARKHAND & W.B	15,000
5.	SINGHORA AND BARAPAHARA PROTO BASIN, CHHATTISGARH AND ORISSA	9,000
6.	PARTS OF KALADGI AND BADAMI BASINS, KARNATAKA	25,000
7.	PARTS OF SONRAI AND BIJAWAR BASINS, U.P. & M.P	8,000
8.	PARTS OF ALBITITE LINE, RAJASTHAN	17,000
9.	ARAVALLI FOLD BELT, RAJASTHAN	25,000
10.	VINDHYAN – MAHAKOSHAL BASIN, M.P.	25,000
11.	ABUJMAR AND INDRAVATI BASINS,CHHATTISGARH	25,000
12.	KUNJAR-DARJING BASINS, ORISSA; SHILLONG, MEGHALAYA AND PAKHAL BASIN, ANDHRA PRADESH	25,000

(d)&(e) The airborne surveys have been planned in a phased manner and subsequent to the same, the data evolved out of the said surveys are to be interpreted and detailed drilling activities are to be carried out to finalize the uranium occurrence. The surveys will hence help in demarcating the favourable areas for further detailed exploration by ground radiometric, geophysical and subsurface exploration. Interpretation of data acquired during 2008-09 is in advance stage of modeling and interpretation. Tasks taken up during 2009-10 are yet to be completed. The uranium potential of identified areas which exhibit conductivity anomaly will be known only after completion of subsurface exploration by drilling.
(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4030
TO BE ANSWERED ON 18.08.2010

IMPLEMENTATION OF SECOND STAGE DEVELOPMENT

4030. SHRI C.R. PATIL:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government is pursuing implementation of second stage development of Atomic Energy in the country as envisaged by Dr.Bhabha;
(b) if so, the details thereof alongwith the achievements made in this regard so far;
(c) whether Second Stage development is scheduled to be completed by 2012;
(d) if so, whether the Government intends to move forward to the third stage development programme by 2013;
(e) if so, whether any time frame has been set for completion of third stage development; and
(f) 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):
(a) Yes, Sir.
(b) The second stage of Indian nuclear power programme envisages development of fast breeder reactors using plutonium-based fuel. The Department of Atomic Energy initiated technology development for liquid metal fast breeder reactors decades back. The Reactor Research Centre (RRC), later renamed as Indira Gandhi Centre for Atomic Research (IGCAR) was set up in 1969 at Kalpakkam in Tamilnadu for this purpose. An experimental 40 MWt Fast Breeder Test Reactor (FBTR) is in operation in IGCAR since October 1985. The reactor has been test bed for the development of subsequent fast breeder reactors. FBTR has provided valuable experience of liquid metal fast breeder technology resulting in the design of the 500 MW Prototype Fast Breeder Reactor (PFBR). The PFBR is now under construction at Kalpakkam.
(c) No, Sir. The first Prototype Fast Breeder Reactor (PFBR) is scheduled to be completed by 2012. Several Fast Breeder Reactors will be set up subsequently. Fast Reactors with metallic fuel having improved breeding ratio will then be developed.
(d) Only after sufficient inventory of U233 is generated through the operations of a large number of FBRs, the third stage programme will be initiated.

(e)&(f) Working out a precise time frame is not possible at this moment. The third stage will be initiated when sufficient installed capacity in the second stage has been built. It is

envisaged that the third stage may commence three to four decades after introduction of fast breeder reactors of shorter doubling time.
(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4077
TO BE ANSWERED ON 18.08.2010

URANIUM CONTAMINATION

4077. SHRI MANISH TEWARI:
SHRI MADHU GOUD YASKHI:
SHRI B.B. PATIL:
SHRI EKNATH M. GAIKWAD:
SHRIMATI HARSIMRAT KAUR BADAL:
Will the PRIME MINISTER be pleased to state:
(a) whether high levels of Uranium contamination has taken place in the Malwa region of Punjab;
(b) if so, the extent of damage caused to this region;
(c) whether a German company called Micro-Trace Minerals Limited has conducted a study that has revealed that hair samples of 80% of 149 neurologically disabled children contain very high levels of Uranium as reported in the media;
(d) if so, whether the Government has conducted any study to validate the source of Uranium contamination;
(e) if so, the outcome thereof;
(f) whether it is relatable to depleted Uranium used in military arsenal in Iraq and Afghanistan;
(g) if so, the details thereof;
(h) whether it is also a fact that very high levels of dangerous heavy metals in the water bodies of Malwa region has also been discerned; and
(i) if so, the action plan of the Government to clean up this mess in Punjab which may become another Bhopal?

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) Yes, Sir. The high levels of Uranium content in drinking water in some of the locations in Malwa region of Punjab have been observed.
(b) - Gurunanak Dev University (GNDU), Amritsar has been conducting extensive sampling of water from Malwa region of Punjab. Once detailed analysis is carried out of these samples, the impact can be assessed.
(c) - Yes, Sir, the Government has seen media reports that a resounding document from Germany's Microtrace Mineral Lab has revealed that hair samples of 80% of 149 neurologically disabled children mainly from southern Malwa region have high levels of Uranium.

(d) & (e) - Gurunanak Dev University (GNDU) is conducting a study under the Board of Research in Nuclear Science (BRNS) project of the Department of Atomic Energy.
(f) & (g) - Bhabha Atomic Research Centre (BARC) analysed a few samples for Uranium isotopic contents. The study shows that the Uranium present in the water samples is natural Uranium and not depleted Uranium.
(h) & (i) - The study carried out by GNDU, Amritsar and Central Soil Salinity Research Institute, Karnal, Haryana shows that the ground water is contaminated with heavy metals like As, Pb, Cd and Ni in Malwa region. The levels of these heavy metals are higher than the levels prescribed by WHO in drinking water.
Department of Atomic Energy awarded a BRNS project to Guru Nanak Dev University, Amritsar for a comprehensive study for Uranium content in various environmental matrices including ground and surface water.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4090
TO BE ANSWERED ON 18.08.2010

PRODUCTION OF HEAVY WATER

4090. SHRI JAI PRAKASH AGARWAL:
Will the PRIME MINISTER be pleased to state:
(a) whether the Heavy Water Plants in the country are producing less heavy water than the targets fixed for production;
(b) if so, the details thereof; and
(c) the details of actual production as well as installed capacity of each plant during the last three years?

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) Heavy Water Plants in operation are producing Heavy Water on most of the years more than their rated capacity as well as their yearly targets fixed for the production.
(b) does not arise.
(c) Heavy water production figures are "confidential". Total annual production of heavy water from all plants remain more than the total capacity of all the plants as well as the annual target fixed.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4094
TO BE ANSWERED ON 18.08.2010

MISSING PICTURE OF '69 MOON MISSION'

4094. SHRI PRADEEP MAJHI:
SHRI UDAY PRATAP SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether the picture of '69 Moon Mission' is missing from the research lab;
(b) if so, whether the Tata Institute of Fundamental Research has constituted a Committee for investigation in this regard;
(c) if so, the details thereof and the outcome therefrom;
(d) the action taken/proposed to be taken against the persons found guilty in this regard; and
(e) if not, the time by which the investigations will be completed?

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) The Tata Institute of Fundamental Research (TIFR) was presented with a framed, autographed photograph of the Appollo 15 mission in 1985 by US Astronaut, James Irwin. As per archival records of TIFR, no photograph of 1969 moon mission was presented to TIFR.

(b) & (c) In June 2009 there was a news report in the Times of India about an autographed photograph of moon mission presented to TIFR having gone missing from TIFR Lab. TIFR constituted a Committee to investigate in to the news paper reports. The Committee conducted an extensive search through the records at the Institute and found that there was only a photograph of the Apollo 15 mission autographed by US Astronaut James Irwin, which was presented to TIFR in 1985. This photograph is still in the Institute in its archive.
(d) & (e) Since no photograph has gone missing, the question of action being taken against persons found guilty, does not arise.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4098
TO BE ANSWERED ON 18.08.2010

FUEL RECYCLE BOARD

4098. SHRI E.G. SUGAVANAM:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has any proposal to set up a Fuel Recycle Board;
(b) if so, the details alongwith its proposed functions thereof; and
(c) the time by which the said Board is likely to be set up?

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) Yes, Sir. Order setting up Nuclear Recycle Board (NRB) has been issued on 24.9.2009.
(b) The Nuclear Recycle Board has been constituted as an entity under Bhabha Atomic Research Centre (BARC) for reprocessing of Spent Fuel from Pressurised Heavy Water Reactors and Associated Waste Management activities. Safety surveillance for board activities will be carried out by BARC Safety Council. Director, BARC is Chairman of the Board. Executive functions will be carried out by the Chief Executive of the Board.
(c) Does not arise, in view of (a) above.
(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4100
TO BE ANSWERED ON 18.08.2010

ATOMIC RESEARCH CENTRE

4100. SHRI MAHABAL MISHRA:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to set up a Atomic Research Centre along the eastern coast of the country on the lines of Bhabha Atomic Research Centre (BARC), Mumbai;
(b) if so, the details thereof; and
(c) the time by which the Research Centre is likely to become 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):
(a) Yes, Sir.
(b) A new campus of Bhabha Atomic Research Centre (BARC), Trombay, on the Eastern Sea Coast approximately 35 Km South of Vishakhapatnam is being set up to carry out strategic and allied R&D work in the field of Nuclear Science.
(c) Land for the campus has been acquired. The Project will be completed by 2012 subject to the statutory clearances.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4104
TO BE ANSWERED ON 18.08.2010

SUPPLY OF NUCLEAR FUEL

4104. SHRI KACHHADIA NARANBHAI:
Will the PRIME MINISTER be pleased to state:
(a) the names of the countries that have agreed to supply nuclear fuel after the nuclear deal with United States of America;
(b) the quantity of nuclear fuel that they have promised to supply;
(c) the names of the countries and the quantum of fuel received from and quantum of fuel to be supplied this year for which deal has been struck;
(d) the names of the countries that have not supplied fuel even after giving consent; and
(e) the reasons therefor?

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)&(c) As part of the civil nuclear cooperation, agreements for supply of nuclear fuel has been entered into with France, Russia & Kazakhstan. The details are tabulated below :-

Sr. No.	Country	Quantity of nuclear fuel to be supplied	Quantum of fuel received till date	Quantum of fuel to be supplied this year
1.	France	Supply of 300 MT of Natural Uranium Ore Concentrates	Full supply received	Nil
2.	Russia	2000 MT Natural Uranium pellets spread over five years	210 MT received	120 MT
		58 MT of Enriched Uranium pellets	Full supply received	Nil
3.	Kazakhstan	2100 MT of Natural Uranium Ore Concentrate spread over six years	300 MT received	300 MT

(d) & (e) The supplies have been regular in accordance with the agreements entered into.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4112
TO BE ANSWERED ON 18.08.2010

EXPLORATION OF URANIUM AND PLUTONIUM

4112. SHRI RAMSINH RATHWA:
SHRI GHANSHYAM ANURAGI:
SHRI P. BALRAM NAIK:
SHRI SURESH KUMAR SHETKAR:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government through its agencies has successfully identified new reserves of Plutonium and Uranium in various parts of the country during the last three years;
(b) if so, the quantity of these metals explored during the above period, location-wise and agency-wise; and
(c) the steps initiated by the Government to further refine these metals for peaceful use in the nuclear plants?

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) The Atomic Minerals Directorate for Exploration and Research (AMD), Hyderabad, a constituent Unit of the Department of Atomic Energy, carried out survey and exploration for uranium in India and has established 1,47,898 tonnes of uranium deposits as on 31.05.2010. During the last three years the uranium resources established by AMD are as follows.

(FIGURES IN TONNES) AREA	STATE	2007–08	2008–09	2009–10
ROHIL	RAJASTHAN	547	220	795
KOPPUNURU	ANDHRA PRADESH	1,228	--	293
PEDDAGATTU	ANDHRA PRADESH	1,407	--	854
TUMMALAPALLE	ANDHRA PRADESH	1,690	12,007	14,131
CHITRIAL	ANDHRA PRADESH	--	--	440
GOGI	KARNATAKA	--	449	--
LOSTOIN	MEGHALAYA	--	12	7
Total:		4,872	12,688	16,520

Plutonium does not occur in nature. Plutonium is produced by nuclear transmutation in nuclear reactors. Thus, resources of plutonium can not be established by survey and exploration.

(c) At Tummalapalle, Kadapa District, Andhra Pradesh, Uranium mine is under construction by the Uranium Corporation of India Ltd. (UCIL), a Public Sector Undertaking of the Department of Atomic Energy. In Gogi, Gulbarga District, Karnataka, exploratory mining is in progress to delineate the ore body configuration and for recovery of bulk samples for development of flow sheet for recovery of Uranium. At Peddagattu-Lambapur, Nalgonda District, Andhra Pradesh; Rohil, Sikar District, Rajasthan and Wahkyn, West Khasi Hills District, Meghalaya, exploratory mining is under consideration.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.4125
TO BE ANSWERED ON 18.08.2010

DEATH OF SCIENTISTS

4125. SHRI INDER SINGH NAMDHARI:
SHRIMATI MANEKA GANDHI:
SHRI YOGI ADITYA NATH:
Will the PRIME MINISTER be pleased to state:
(a) whether a number of scientist/employees of Bhabha Atomic Research Centre (BARC), Mumbai have committed suicide and also died due to cancer;
(b) if so, the details of such incidences for the last three years and the current year;
(c) whether the Government has analysed the reasons for high incidences of cancer and suicides among scientists/employees;
(d) if so, the outcome thereof; and
(e) the corrective measures taken/being taken by the Government in this regard?
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) The number of scientists/employees of BARC who have committed suicide and also died due to cancer is given below:

YEAR	2007	2008	2009	2010	TOTAL
DEATHS DUE TO CANCER	2	2	2	2	8
SUICIDES	NIL	NIL	1	4	5

(c), (d) & (e) The incidence of deaths on account of suicide/cancer cannot be said to be high among the BARC employees, as may be seen from the information given above. The reasons for suicide are general and not specifically attributable to official work. However, necessary facilities to provide medical, psychiatric and social assistance is being provided to them.

(http://www.dae.nic.in/writereaddata/ls180810.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1951
TO BE ANSWERED ON 12.08.2010

PACT ON NUCLEAR REPROCESSING

1951 SHRI PRAKASH JAVADEKAR
WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether India and US have signed a pact on Nuclear reprocessing.
(b) if so, the details thereof;
(c) whether signing of nuclear reprocessing pact is directly linked to passage of Civil Nuclear Liabilities Bill; and
(d) if so, the reasons therefor?

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) - 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. Article 6(iii) of the Agreement calls for consultations on arrangements and procedures within one year.
In March 2009 the US responded to India's request invoking Article 6(iii) of the Indo-US agreement on Arrangements and Procedures confirming that the first round of formal consultations, would commence no later than 3 August 2009 and that final agreement on Arrangements and Procedures is to be reached no later than 3 August 2010. The text has been finalized in the last round of negotiations held from 2-4 March 2010 and signed in Washington on 30 July 2010. The Arrangements and Procedures have not so far been entered into force.
(c) - No Sir.
(d) - Does not arise.

(http://www.dae.nic.in/writereaddata/rs120810.pdf#page=1%20PACT)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1952
TO BE ANSWERED ON 12/08/2010

CONSTRUCTION OF NEW NUCLEAR POWER PLANTS

1952 SHRI RANJITSINH VIJAYASINH MOHITE-PATIL
WILL THE PRIME MINISTER be pleased to state:
a) whether Government has announced programme for the construction of new nuclear power plants;
b) whether a deal has been signed by the Prime Minister to this effect during his visit to Canada in June, 2010 for G-20 summit;
c) whether Government plans to add twelve new reactors by 2020 as part of its expansion of nuclear activities;
d) whether Government has awarded any contract to a Canadian firm for the purpose; and
(e) if so, the details of the agreement and award of contract thereto?

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

(b) An agreement between the Government of the Republic of India and the Government of Canada for Co-operation in Peaceful Uses of Nuclear Energy has been signed on 27 June 2010. The agreement has not yet entered into force.

(c) The number of new reactors planned to be added by the year 2020 is twenty five. Details are as under: • 4 Reactors (Kaiga-4, KK-1&2 and FBR) in advanced stages of construction will be added by 2012 progressively.
• 4 Reactors (KAPP-3&4 and RAPP-7&8) just launched will be added by 2017.
• Work on:

- 4 Pressurised Heavy Water Reactors
- 10 Light Water Reactors
- 2 Fast Breeder Reactors
- 1 Advanced Heavy Water Reactor

is planned to be started in XI Plan / early XII Plan.
(d) No, Sir.

(e) Not Applicable.

(http://www.dae.nic.in/writereaddata/rs120810.pdf#page=1%20PACT)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1953
TO BE ANSWERED ON 12.08.2010
PRIVATE INVESTMENTS IN NUCLEAR POWER SECTOR
1953 DR. T. SUBBARAMI REDDY:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether the Prime Minister's economic advisory panel has suggested that nuclear power sector would be opened up to private investments which would help the power starved economy to grow on a sustained basis;
(b) whether the panel has also pointed out that there is an urgent need to make regulatory changes so that investment including from established private companies interested in the business can begin to flow;
(c) if so, the other important suggestions recommended by the panel; and
(d) if so, whether Government has accepted the same?

ANSWER
THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGES), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.
(SHRI PRITHVIRAJ CHAVAN):
(a) - Yes Sir.
(b) - The Economic Advisory Council to the Prime Minister in its Review of the Economy 2009-10 of February 2010 has stated, "there is an urgent need to make the necessary regulatory changes quickly, so that investment including that from established private companies interested in this business, can begin to flow.
(c) - Economic Advisory Council to the Prime Minister in its 'Economic Outlook for 2009/10' of October 2009 inter-alia highlighted the need to diversify our fuel sources and develop more natural gas and nuclear energy based power plants as opposed to the coal based capacities that currently exist and to bring legislative changes to allow the entry of private companies into the business of nuclear power generation within an appropriate regulatory framework.
(d) - The Atomic Energy Act, 1962 as amended in 1987 gives power to Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government company.
Any possible amendment to the Atomic Energy Act, 1962 would need to be considered in a careful manner after a detailed examination of all issues including nuclear safety, physical security.
The Atomic Energy Act, 1962, permits private participation in setting up of nuclear power plants as a minor partner of a government company. The entry of private entities as minor partner in this activity will enable them to learn complexities of nuclear technologies, quality and safety culture and a long term commitment which extends upto the entire life time of

power plants. At this stage, government does not intend to change the related provision of the Atomic Energy Act, 1962 for private participation in setting up of nuclear power plants

(http://www.dae.nic.in/writereaddata/rs120810.pdf#page=1%20PACT)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1954
TO BE ANSWERED ON 12.08.2010
RADIATION EXPOSURE FROM COBALT
1954 SHRI SATYAVRAT CHATURVEDI:
SHRI MOTILAL VORA:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether it is a fact that radio-active Cobalt-60 and cylinder containing poisonous arsenic gas had been sold to the scrap dealer by Delhi university in April 2010;
(b) the number of people affected by coming in contact with Cobalt-60 so far;
(c) the place where affected people are being treated, the estimated expenditure on their treatment and the authority bearing the expenditure.
(d) the compensation given to affected people by Government; and
(e) the steps being taken by Government so that such incidents may not occur in the future?
ANSWER
THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGES), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.
(SHRI PRITHVIRAJ CHAVAN):
(a) - As per the information furnished by the University of Delhi, they had disposed off an old Gamma cell Model-220 containing Cobalt-60 source to a scrap dealer by auction in February 2010 and they have not sold any cylinder containing poisonous arsenic gas to the scrap dealer in April 2010.
(b) to (d) - As per the data available with the Atomic Energy Regulatory Board (AERB), a total of seven persons with radiation induced symptoms in the incident of radiation leak from Cobalt-60 in Mayapuri industrial area of New Delhi in April 2010 were treated in different hospitals of Delhi viz. Apollo Hospital (one person), AIIMS (five persons) and Military Hospital (one person). One of the persons, admitted in AIIMS succumbed to death on 26 April 2010. The other six persons have been discharged from the hospitals on various dates. The last person was discharged on 24 May 2010. The Department of Atomic Energy has not incurred any expenditure towards the medical treatment or compensation to the victims of this incident.
University of Delhi has informed that it has so far disbursed Rs.14 lakh towards compensation to the affected persons. In addition to the monetary compensation, the University has also employed the wife of the deceased person in the University services on a permanent basis.
(e) - Several actions have been taken by Atomic Energy Regulatory Board (AERB) and other Government agencies to prevent incidents like Mayapuri. Some of the steps taken are:
i. Planned installation of Radiological Detection Equipments (RDEs) at entry/exit of airports, sea-ports, inland container depots and other land ports.

ii. Further efforts are being made to bring legacy sources (which may have been in existence from periods when regulatory controls were still in the evolving stage) under regulatory control by scanning old records.

iii. The inventory of sources based on inputs from various Government departments/agencies, source suppliers, response to advertisement issued in newspapers, etc. is being updated.

iv. The number of awareness programmes pertaining to radiation safety in various areas in the country has been increased. Members of scrap association have been sensitized to monitor scrap for radiation. On May 6, 2010 AERB organized an awareness programme for scrap dealers and workers of Mayapuri scrap market. In this program, more than 150 participants were familiarized with the use of radiation monitors.
v. The requirement of pre-shipment inspection certificate for consignments imported to India declaring that they do not contain any type of hazardous, toxic waste, radioactive contaminated waste/scrap has been notified.

vi. Enhanced regulatory control by increasing frequency of inspection and establishment of Regional Centres of AERB.

(http://www.dae.nic.in/writereaddata/rs120810.pdf#page=1%20PACT)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. * 257
TO BE ANSWERED ON 11.8.2010

EXPLORATION OF THORIUM

*257 SHRI RAJIV RANJAN SINGH ALIAS LALAN SINGH :
DR. MURLI MANOHAR JOSHI :
WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) Whether large deposits of thorium are found in various parts of the country;

(b) If so, the details thereof;

(c) Whether India has developed indigenous technology for using thorium for generating nuclear energy; and

(d) If so, the details thereof alongwith the names of countries which have fully developed this technology?

A N S W E R
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) to (d) A statement is placed on the table of the House.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO.257 DUE FOR ANSWER ON 11.8.2010 BY SHRI RAJIV RANJAN SINGH ALIAS LALAN SINGH AND DR. MURLI MANOHAR JOSHI REGARDING EXPLORATION OF THORIUM.

(a) Yes, Sir.

(b) Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy has established 10.70 million tonnes of Monazite resources in the Beach sand placers along the eastern and western coast of the country as well as the inland placers in parts of Kerala, Andhra Pradesh, West Bengal, Tamil Nadu, Orissa and Jharkhand. Monazite resources contain about 9-10% of Thorium Oxide. About 8.5 lakh tonnes of thorium metal can be recovered from the said Monazite resources which will be used for future programmes of DAE.

(c) Yes, Sir.

(d) India has been working on the development of technologies for Utilisation of Thorium for Nuclear Power Generation since the inception of the Indian Nuclear Programme. As a part of this work thorium has been irradiated in our Research Reactors and also in Pressurised Heavy Water Reactors. Technologies for reprocessing of irradiated thorium fuel for the separation of Uranium-233 have also been developed on a pilot plant scale. Uranium-233 thus separated has been used as fuel in research reactor Purnima-II and later in the 30 kw Research Reactor Kamini now in operation at Indira Gandhi Centre for Atomic Research (IGCAR). Thorium based fuel has been manufactured and loaded in the Advanced Heavy Water Reactor (AHWR) critical facility for Reactor Physics experiments as well. Further development of technologies for large scale commercial level manufacture and reprocessing of Uranium 233 bearing fuels is underway.

In the early stages of development of nuclear energy in the world, several fuel options were investigated by different countries. These investigations also covered the use of thorium. Notably, the Shippingport Pressurised Water Reactor in United States and Arveitgemeinschaft Versuchs Reaktor (AVR) and Thorium High Temperature Reactor (THTR)-300, the High Temperature Gas Cooled Reactors in Germany demonstrated the use of thorium bearing fuel. However, no major programme was pursued for recycling of thorium based fuel and large scale utilization of thorium in reactors where a major component of power came from fission of Uranium 233.

Today, India is known to be the only country in the world today operating the Kamini reactor with Uranium 233 based fuel. The Indian Advanced Heavy Water Reactor is the only large scale reactor that has been designed and developed to produce a large fraction, nearly 2/3rd of its power from the fission of Uranium 233 in the equilibrium state of this reactor core.

(http://www.dae.nic.in/writereaddata/lssq257_110810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2829
TO BE ANSWERED ON 11.08.2010

CIVIL NUCLEAR COOPERATION AGREEMENTS

2829 SHRI MANISH TEWARI:
WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the agreement for civil nuclear cooperation signed by India with Canada would effectively end the controversy over the CIRUS reactor;
(b) if so, the details thereof;
(c) whether India is in an advanced stage of discussions regarding Civil Nuclear Cooperation with South Korea;
(d) if so, the details thereof; and
(e) the views of the various nations with whom India has entered into Nuclear Cooperation agreements on the need of a nuclear liability regime in India?

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) - The Government of the Republic of India and the Government of Canada signed an agreement for Cooperation in Peaceful Uses of Nuclear Energy on 27 June 2010. This will facilitate civil nuclear cooperation between the two countries. The Agreement has not yet entered into force.
(c) & (d) - In the India-Republic of Korea Joint Statement: Towards a Strategic Partnership issued on 25 January 2010, H.E. Mr. Lee Myung-bak, President of the Republic of Korea (ROK) and Prime Minister of India agreed that nuclear energy can play an important role as a safe, sustainable and non-polluting source of energy. They agreed to facilitate development of a framework for bilateral civil nuclear cooperation. Negotiations were held between India and ROK on 6-7 July 2010 in Mumbai on finalization of an Inter-Governmental Agreement (IGA) on civil nuclear cooperation.
(e) - The expectations of nuclear suppliers from France, Russia, USA and other countries are for an adequate liability regime in India covering bilateral nuclear cooperation. Our civil nuclear cooperation agreements with countries like Russia and France have specific provisions relating to civil nuclear liability.

(http://www.dae.nic.in/writereaddata/ls110810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2980
TO BE ANSWERED ON 11.08.2010

NUCLEAR SECURITY SUMMIT

2980 SMT. SUPRIYA SULE
WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether looking to play a proactive role at the US-sponsored Nuclear Security Summit in Washington on April12-13, India has offered to set up the first ever international centre on nuclear security in India;
(b) if so, whether this decision has received a positive response;
(c) if so, whether this will form one of the key outcome of the summit;
(d) if so, the details thereof;
(e) whether India has offered to fully fund and set up this centre of excellence;
(f) if so, the time by which the centre is likely to be setup; and
(g) the amount spent so far in this regard?

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) to (d) Prime Minister announced on 13 April 2010 at the Nuclear Security Summit in Washington, that India will establish a Global Centre for Nuclear Energy Partnership. The Centre will be owned and managed by the Government. It will be open to international participation through academic exchanges, training and research and development efforts. The Centre is aimed at strengthening India's cooperation with the international community in the areas of advanced nuclear energy systems, nuclear security, radiological safety, and radiation technology applications in areas such as health, food and industry. There was positive response to this initiative at the Nuclear Security Summit.
(e) to (g) A phased approach will be followed for setting up of the Centre and no expenditure has so far been incurred on the Centre.

(HTTP://WWW.DAE.NIC.IN/WRITEREADDATA/LS110810.PDF)

LOK SABHA
UNSTARRED QUESTION NO.2854
TO BE ANSWERED ON 11.08.2010

SHRI VILAS MUTTEMWAR:

Q.2854 INDIA-KOREA NUCLEAR DEAL

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether India and South Korea have decided to hold negotiations with regard to the export of nuclear power plants to India by South Korea;
(b) if so, the details thereof;
(c) whether India and South Korea also agreed to hold bilateral talks to increase trade between the two countries;
(d) if so, the extent to which further increase in trade is expected as against the existing trend; and
(e) the details of the main items of export/import between the two countries?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) & (b) The Government of India and the Republic of Korea have held discussions on bilateral civil nuclear cooperation and these discussions are ongoing.

(c) & (d) There is no proposal at present for holding bilateral talks between India and Republic of Korea to increase trade between the two countries. However, as a result of implementation of Comprehensive Economic Partnership Agreement between India and the Republic of Korea, which came into force from 1st January 2010, the bilateral trade is likely to increase considerably. In the India-Republic of Korea Joint Statement issued on 25 January 2010 during the Republic of Korea President's visit to India, the two Governments agreed to set a target of US$ 30 billion for bilateral trade to be achieved by 2014.
(e) The principal commodities of export to ROK are petroleum (crude & products); cotton yarn, fabrics and products; gems & jewellary; machinery and instruments; ferro alloys; non-ferrous metals; inorganic/organic/agro chemicals; aluminium (other than products); oil meals; as well as primary and semi-finished iron & steel. Principal commodities of import from ROK are iron & steel; electronic goods; petroleum (crude & products); machinery and professional instruments (except electronic); transport equipments; plastic materials; project goods; organic chemicals; non-ferrous metals; manufactures of metals; other commodities; synthetic and reclaimed rubber; machine tool; and newsprint.
(http://meaindia.nic.in/mystart.php?id=100516378)

LOK SABHA
STARRED QUESTION NO.247
TO BE ANSWERED ON 11.08.2010

SHRI VARUN GANDHI:

Q.*247 NUCLEAR NON-PROLIFERATION TREATY

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) the names of the countries which are yet to sign Nuclear Non-Proliferation Treaty (NPT);
(b) the reaction of the Government over the achievements and the failures of the Nuclear NPT Review Conference 2010 in creation of tangible provisions for universal nuclear design to discourage non-compliance, defection and discrimination; and
(c) the position of the Government over the NPT, and the post NPT Review Conference 2010?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) Three countries, namely India, Israel and Pakistan have not signed the Nuclear Non-Proliferation Treaty (NPT).

(b) & (c) India is not a party to the NPT and did not attend the NPT Review Conference held in New York from 3-28 May 2010. India has a longstanding and consistent position on the NPT that it is a discriminatory treaty. India's position remains unchanged. Even though India is not a party to the NPT, it remains committed to global, non-discriminatory and verifiable nuclear disarmament and the complete elimination of nuclear weapons in a specified framework of time.
(http://meaindia.nic.in/mystart.php?id=100516358)

RAJYA SABHA
UNSTARRED QUESTION NO.1238
TO BE ANSWERED ON 05.08.2010

SHRI MANI SHANKAR AIYAR:

Q.1238 NUCLEAR WEAPON POLICY

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the 1988 Rajiv Gandhi Action Plan for the Nuclear-Weapons-Free and Non-violent World Order continues to remain the 'sheet-anchor' of the external dimension of Government's nuclear weapons policy;
(b) if so, the steps taken by Government to raise the Action Plan in the First Committee of the UN General Assembly (UNGA) for reference to the UN Disarmament Commission in Geneva;
(c) if not, whether Government proposes to pursue this matter in the First Committee at the forthcoming UNGA commencing September, 2010; and
(d) if so, whether this would be on the basis of the updated version in treaty language formally presented by the President of the Indian National Congress to the UN Secretary General in 2001?

ANSWER THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)
(a) to (c) Government remains committed to the objectives of the 1988 Rajiv Gandhi Action Plan for Nuclear Weapon Free and Non-violent World Order. This was stated on numerous occasions in the UN General Assembly including in the statement made by the Prime Minister on 26 September 2008 as well as in statements made by the Indian delegation in the First Committee of the UN General Assembly dealing with Disarmament and International Security. Similarly, reference to the Rajiv Gandhi Action Plan was included in the Working Paper on Nuclear Disarmament submitted by India to UN General Assembly in 2006. India's national statements in recent years at the Conference on Disarmament in Geneva have also included references to the Rajiv Gandhi Action Plan. Government proposes to pursue this matter in the First Committee in the forthcoming UN General Assembly commencing in September 2010.

(d) Government has not taken a decision on any updated version of the Rajiv Gandhi Action Plan of 1988.

(http://meaindia.nic.in/mystart.php?id=100516341)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1179
TO BE ANSWERED ON 05/08/2010

URANIUM DEPOSITS IN STATES

1179 SHRI SHANTA KUMAR:
Will the PRIME MINISTER be please to state:
(a) whether Government has any information about uranium deposits in different States of the country;

(b) if so, the details thereof;

(c) the actual requirement of out atomic energy reactors for power generation;

(d) out of our total requirement of uranium, the amount that is from our own sources and how much is imported and from which country; and

(e) is there any plan track the entire uranium reserves?

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) Yes, Sir. The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent Unit under this Department has so far established 1,47,898 tonnes of in-situ uranium (U3O8) as on 31.05.2010. The State-wise details of the same are as follows:

STATE	ESTIMATED RESOURCES (TONNES U3O8)
ANDHRA PRADESH	66,205
CHHATTISGARH	3,986
HIMACHAL PRADESH	784
JHARKHAND	48,074
KARNATAKA	4,682
MAHARASHTRA	355
MEGHALAYA	17,252
RAJASTHAN	5,675
UTTAR PRADESH	885
TOTAL	1,47,898

[1 TONNE OF U3O8 = 0.848 TONNES OF URANIUM METAL]

(c)&(d) The first stage of nuclear power programme of setting up Pressurized Heavy Water Reactor (PHWR) capacity of 10,000 MW requires total of about 1,00,000 Tonnes of natural uranium Fuel. Currently, a PHWR capacity of 4,240 MW is in operation. Out of this capacity of 3,060 MW is fuelled by indigenous uranium and balance 1180 MW is operated on imported uranium. The total imported uranium as on date is as follows:

Sr. No.	Country	Quantity imported
1.	France	300 MT of Natural Uranium
2.	Russia	210 MT of Natural Uranium Oxide Pellets
		58 MT of Enriched Uranium Oxide Pellets
3.	Kazakhstan	300 MT of Natural Uranium Ore Concentrate

(e) Yes, Sir. The Atomic Minerals Directorate for Exploration and Research is involved in exploration and tracking of uranium reserves in the country.

(http://www.dae.nic.in/writereaddata/rs050810.pdf#page=4%20RISK)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1180
TO BE ANSWERED ON 05/08/2010

CONTRACT FOR URANIUM MINING

1180 SHRI P. RAJEEVE:

Will the PRIME MINISTER be please to state:
(a) whether Government of India has entered into any contract for uranium mining from any country; and

(b) 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):
(a) NoSir
(b) does note arise in view of (a) above
(http://www.dae.nic.in/writereaddata/rs050810.pdf#page=4%20RISK)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1181
TO BE ANSWERED ON 05/08/2010

RISK OF CANCER AMONG DAE EMPLOYEES

1181 SHRI K.N. BALAGOPAL
Will the PRIME MINISTER be please to state:
(a) whether any study has been conducted of cancer risk among the serving employees of the Department of Atomic Energy located in Mumbai, Tarapur, Hyderabad, Kalpakkam and Alwaye;

(b) if so, the details thereof; and

(c) the number of DAE employees died of cancer for the last fifteen years?

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) Yes Sir.
(b) A team of officials of DAE had carried out a study of cancer risks among the serving employees of the Department of Atomic Energy located in Mumbai, Tarapur, Hyderabad, Kalpakkam and Alwaye, in the 90's. For this study data on age, sex, site specific cancer deaths etc. was collected. The mean duration of the study was about 18 years and consisted of database of over three lakh person-years. A total of 81 cancer deaths were recorded in the study. Under the XI Plan, a project has been taken up to compile the data of mortality rate due to cancer among DAE employees and the process of collection of data is presently on.
(c) The information compiled so far has revealed that 69 employees of BARC died of cancer during the last 15 years and similar data for other Units of the Department of Atomic Energy is being collected under the XI Plan project mentioned above.

(http://www.dae.nic.in/writereaddata/rs050810.pdf#page=4%20RISK)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1182
TO BE ANSWERED ON 05/08/2010

RADIOACTIVE COBALT IN MAYAPURI

1182 SHRI MOTILAL VORA:

SHRI SATYAVRAT CHATURVEDI:
Will the PRIME MINISTER be please to state:
(a) whether it is a fact that a number of people got seriously ill on April, 2010 in Mayapuri, Delhi due to radioactive cobalt-60 sold to scrap vendor there;

(b) if so, the details thereof;

(c) whether Government has not formulated any policy on radiation so far due to which biomedical and radioactive waste is not being disposed off properly by hospitals and other agencies; and

(d) if so, by what time Government would frame a law in this regard?

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) Yes, Sir.
(b) In the Mayapuri incident, 7 persons were reported with radiation induced symptoms. They were treated in different hospitals of Delhi namely Apollo
Hospital (one person), AIIMS (5 persons) and in Military Hospital (one person). One of the persons admitted to AIIMS succumbed to death on April 26, 2010. The other six persons have been discharged from the hospitals on various dates. The last one was discharged on May 24, 2010.
(c) The Atomic Energy (Radiation Protection) Rule, 2004 and the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987 framed under the Atomic Energy Act, 1962 lay down the radiation safety requirements.
(d) Does not arise.

(http://www.dae.nic.in/writereaddata/rs050810.pdf#page=4%20RISK)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1624
TO BE ANSWERED ON 04/08/2010

CONSTRUCTION OF POWER PLANTS

1624. SHRI S.R. JEYADURAI:
Will the PRIME MINISTER be pleased to state:
(a) the details of nuclear power plants in the country which have been either shut down due to safety problems or are functioning below their installed capacity due to shortage of fuel;
(b) the details of reactors which are under construction and the year from which these are under construction; and
(c) the steps taken by the Government to fast track construction of nuclear power plants in the country to generate clean energy?
THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS.
(SHRI CHAVAN):
(a) While no nuclear power plants have been shutdown due to safety problems, nine reactors (2620 MW) are being operated at lower power levels due to shortage of fuel. The details are attached.
(b) The details of reactors under construction are as follows :

Project & Capacity	Commencement of Construction	Present Status
Kaiga-4 (220 MW)	March 2002	Construction complete, awaiting fuel.
Kudankulam 1&2 (2x1000 MW)	March 2002	Physical progress 93.8%, expected completion 2011.
PFBR (500 MW)	October 2004	Physical progress 56%, expected completion 2012.

In addition, the work on four reactors (KAPP-3&4 - 2x700 MW) and (RAPP- 7&8 - 2x700 MW) has recently commenced.

(b) Current capacity of 4560 MW is expected to reach 7280 MW by end of XI Plan and 10080 MW by 2017 progressively. More projects, including setting up of reactors in co-operation with foreign countries are also planned to increase nuclear power.

ANNEXURE

No.	Unit	Rated Capacity (MW)	Current (July 2010) Operating Capacity
Reactors fuelled by imported Uranium			
1	TAPS-1	160	160
2	TAPS-2	160	160
3	RAPS-2	200	200
4	RAPS-3	220	220
5	RAPS-4	220	220
6	RAPS-5	220	220
7	RAPP-6	220	220
	TOTAL	1400	1400
Reactors fuelled by domestic Uranium - Operated at max 70% of full power			
8	TAPS-3	540	380
9	TAPS-4	540	370
10	MAPS-1	220	140
11	MAPS-2	220	130
12	NAPS-1	220	140
13	KAPS-2	220	130
14	KAIGA-1	220	150
15	KAIGA-2	220	130
16	KAIGA-3	220	150
	TOTAL	2620	1720
Reactors awaiting fuel after Renovation & Modernization			
17	NAPS-2	220	
18	KAPS-1	220	
	TOTAL	440	
Shut down for techno economic assessment on continuation of operations.			
19	RAPS-1	100	
	TOTAL CAPACITY	4560	3120

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1650
TO BE ANSWERED ON 04/08/2010

ENVIRONMENTAL POLLUTION BY NUCLEAR POWER PLANTS

1650. SHRI SUVENDU ADHIKARI:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has received complaints from various quarters in recent past regarding environmental pollution caused by nuclear power plants in the country;
(b) if so, the details of such complaints; and
(c) the remedial action taken by the Government in this regard?
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) No, Sir.
(b)&(c) Not applicable.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1680
TO BE ANSWERED ON 04/08/2010

SUPPLY OF NUCLEAR EQUIPMENTS

1680. SHRI P.R. NATARAJAN:
Will the PRIME MINISTER be pleased to state:
(a) the names of member countries of Nuclear Suppliers Group (NSG);
(b) whether the Government has signed any Agreement with the NSG countries for nuclear supply to India;
(c) if so, the details of conditionalities, country-wise;
(d) whether any ban has been imposed by G-8 countries for sale of enrichment and reprocessing (ENR) technology and equipments to India;
(e) if so, the details thereof; and
(f) the action taken by the Government in this regard?
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) As per the information available in the public domain the current participating Governments of the Nuclear Suppliers Group (NSG) are – Argentina, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Kazakhstan, Republic of Korea, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and United States.
(b) Government of India has signed the following bilateral Civil Nuclear Energy Cooperation Agreements with the NSG participating Governments:-
(i) Cooperation Agreement between the Government of the Republic of India and the Government of the French Republic on the Development of Peaceful Uses of Nuclear Energy was signed on 30 September 2008. This Agreement has since been ratified.
(ii) Agreement for Cooperation between the Government of India and the Government of the United States of America Concerning Peaceful Uses of Nuclear Energy was Signed on 10 October 2008. This Agreement has since been ratified.
(iii) Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the Construction of Additional Nuclear Power Plants Units at Kudankulam site as well as in the Construction of Russian designed Nuclear Power Plants at new sites in the Republic of India was signed on 05 December 2008.

(iv) Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the Use of Atomic Energy for Peaceful Purposes was signed on 12 March 2010.

(v) Agreement between the Government of the Republic of India and the Government of Canada for Cooperation in Peaceful Uses of Nuclear Energy was signed on 27 June 2010.
(b) Agreement with France and US have been ratified and the highlights are indicated below. The Agreement dated 5 December 2008 with Russia is specific on cooperation in the Construction of Additional Nuclear Power Plants at Kudankulam Site as well as in the construction of Russian Designed Nuclear Power Plants at New Sites in the Republic of India. The agreement dated 12 March 2010 with Russia and the Agreement dated 27 June 2010 with Canada have not yet entered into force.

Agreement with France	Agreement with USA
A general agreement covering wide areas including nuclear reactors, nuclear fuel and nuclear fuel cycle management; to be followed by specific agreements between the Parties or persons designated by the Parties.	A general agreement covering wide areas including nuclear reactors and aspects of associated nuclear fuel cycle; to be followed by contracts pursuant to the agreement.
Provides of technology transfer on industrial or commercial scale between the Parties or designated persons.	Provides for technology transfer on an industrial or commercial scale between the Parties or authorized persons.
Provides for progressive localization in the territory of the recipient Party.	No specific mention of these issues, however, provides for transfer of information for the design and construction of reactors.
Specifically provides for non-hindrance.	Specifically provides for non-hindrance.
Provides for facilitating fuel supplies for the lifetime operation of supplied nuclear power plants, establishment of long-term contracts between designated entities of the Parties, developing a strategic reserve of nuclear fuel, Termination of cooperation is without prejudice to the implementation of fuel supply commitments.	Provides for fuel supply throughout the operational period of the reactors on contractual basis at prices to be negotiated.
Provides for IAEA safeguards and linkage of safeguards to fuel supplies. Provides for verification measures in case application of IAEA safeguards is not possible.	Provides for IAEA safeguards and linkage of safeguards to fuel supplies. Provides for verification measures in case application of IAEA safeguards is not possible.
Provides reprocessing consent, reprocessing to be done in a national nuclear facility under IAEA safeguards.	Provides consent for reprocessing, but in a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards following the Parties agreeing on arrangements and procedures.
Provides for termination. Termination of cooperation to be without prejudice to the implementation of contracts, ongoing	Provides for termination including right of return; no commitment made with regard to honouring ongoing contracts and

projects and fuel supply commitments made prior to termination.

projects.

(d)to(f) At the L'Aquila Summit held on July 8-10, 2009, the G-8 countries adopted a Statement on Non-Proliferation. The Statement details positions of G-8 countries in several areas such as obligations of NPT states, IAEA safeguards, multilateral approaches to the nuclear fuel cycle and the proliferation risks associated with enrichment and reprocessing (ENR) items and technology.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1689
TO BE ANSWERED ON 04/08/2010

PRODUCTION OF URANIUM

1689. SHRI KHAGEN DAS:
SHRI MANOHAR TIRKEY:
SHRI PRASANTA KUMAR MAJUMDAR:

Will the PRIME MINISTER be pleased to state:

(a) the status of uranium mining by the Uranium Corporation of India Limited (UCIL) in Andhra Pradesh and Meghalaya;
(b) the estimated uranium reserves in these areas separately; and
(c) the constraints, if any, in starting, uranium mining in these areas and the steps taken by the Government to address the issue?

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) Uranium Corporation of India Limited (UCIL) a Public Sector Undertaking (PSU) of Department of Atomic Energy is constructing a new mine and processing plant at Tummalapalle in Kadappa District of Andhra Pradesh (A P). It is also proposed to set up mines and processing plant at Lambapur-Peddagattu in the Nalgonda District of A P and a mine and mill at Kylleng Pyndengsohiong Mawthabah in the West Khasi Hills district of Meghalaya. Various pre-project activities are being carried out and project will commence only after receipt of all statutory clearances from State and Central Governments.

(b) Atomic Minerals Directorate for Exploration and Research (AMD) of the Department of Atomic Energy (DAE) has so far established uranium reserves amounts to 66,205 tonnes in Andhra Pradesh and 17,252 tonnes in Meghalaya
(c) In Meghalaya the major constraint for the Project has been environment, economic and health concerns perceived by some NGOs and local people. The DAE and UCIL have for the last five years been regularly conducting Awareness Programme to clear the misconceptions regarding uranium mining in West Khasi Hills of Meghalaya and also addressing the economic and environmental concerns. Visits to the operating units of UCIL in Jaduguda were also arranged to provide assurance on safety and best environment management practices adopted by UCIL.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1691
TO BE ANSWERED ON 04/08/2010

ABDUCTION OF SCIENTISTS

1691. SHRI C. RAJENDRAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government is aware that scientists from Kalpakkam Atomic Power Plant have been abducted and killed in the recent past;
(b) if so, the details thereof and the reasons therefor; and
(c) the steps taken/proposed to be taken by the Government to protect the scientists?
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 is no incident of abduction or killing any Scientist of Madras Atomic Power Station, Kalpakkam.
(c) Adequate security arrangements have been provided both at the plant site and in the residential township at Kalpakkam.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1693
TO BE ANSWERED ON 04/08/2010

RADIOACTIVE LEAK IN MAYAPURI

1693. SHRI D.B. CHANDRE GOWDA:
Will the PRIME MINISTER be pleased to state:
(a) whether the International Atomic Energy Agency has sought more information on the radioactive waste incident which occurred at Mayapuri area;
(b) if so, the details thereof;
(c) whether the Atomic Energy Regulatory Board has investigated the matter; and
(d) if so, the outcome thereof?
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) Yes, Sir.
(b) Atomic Energy Regulatory Board (AERB) informed the International Atomic Energy Agency (IAEA), about the incident that occurred at Mayapuri in the specified reporting format, assigning a rating of Level 4 in the International Nuclear and Radiological Event Scale (INES). Events are rated in this scale as per the ascending order of severity from 1 to 7. AERB has also provided information on this incident to the Illicit Trafficking Data Base (ITDB) of the IAEA. In addition, a senior official from AERB presented the incident in a meeting at IAEA. No additional information was sought by IAEA on this matter.
(c) Yes, Sir
(d) The incident was investigated by AERB and Delhi police. Based on the investigations, it was established that the radioactive Co-60 sources recovered from the Mayapuri scrap market in Delhi were part of an old gamma cell belonging to the Chemistry Dept of Delhi University. This cell was procured by the Chemistry Dept of Delhi University in 1969 from Atomic Energy Canada Ltd and was being used by a Chemistry professor till he retired. Since then it remained disused for more than 15 years till it was auctioned by the Delhi University in Feb 2010 and reached the hands of the scrap dealer who purchased it through this auction. Dismantling of the gamma cell by local workers at the metal scrap shop led to the highly radioactive Co-60 pencil sources coming out of its cage. The extended stay near the sources by the workers unknowingly, caused unwarranted high exposure to 7 persons with radiation induced symptoms of whom one succumbed to radiation sickness.
The unauthorized disposal of the gamma cell by the Delhi University as a scrap was in violation of the Atomic Energy (Safe Disposal of Radioactive Waste) Rules, 1987 and the Atomic Energy (Radiation Protection) Rules, 2004. In view of this, AERB issued a show cause notice to the Delhi University and in the interim, advised the university to suspend forthwith

all activities involving the use of radiation sources. The preliminary response submitted by the University needs review by AERB.
(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1716
TO BE ANSWERED ON 04/08/2010

ENVIRONMENT CLEARANCE TO POWER PLANTS

1716. SHRI GOPINATH MUNDE:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has permitted to set up Atomic Power Plants at Jaitapur in Maharashtra and Hirapur in West Bengal ignoring the atomic security norms and the potential dangers of radiation as well;
(b) if so, the details thereof;
(c) the reasons for ignoring the environment impact evaluation report before giving the said permission;
(d) whether the Government is likely to reconsider its decision; and
(e) if so, the details thereof?
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)to(e) The government has accorded 'in principle' approval for the sites at Jaitapur in Maharashtra and Haripur in West Bengal after evaluation of all aspects by the Site Selection Committee which has members from Atomic Energy Regulatory Board (AERB) and the Ministry of Environment & Forests (MoEF), amongst others. The siting consent from AERB will now be sought through a detailed well laid down siting consent process. Similarly, environmental clearance from MoEF will be obtained after Environment Impact Assessment, public consultations and review by Expert Advisory Committee of MoEF. These activities are carried out in parallel and detailed review will determine the decision/specific actions needed for environment protection

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1724
TO BE ANSWERED ON 04/08/2010

INSPECTION OF NUCLEAR POWER PLANTS

1724. SHRI PRADEEP MAJHI:
Will the PRIME MINISTER be pleased to state:
(a) whether review of operation of nuclear power plants is carried out by the Atomic Energy Regulatory Board (AERB);
(b) if so, the details thereof alongwith the names of the nuclear power stations inspected by the Board during 2008-09 and 2009-10;
(c) the details of criteria/norms fixed for such inspection;
(d) the name of plants in which the incident of leakage or discharge of radioactivity beyond and within the limit specified by the AERB reported during the said period;
(e) the steps taken to avoid any impending danger of radioactivity created by these power stations;
(f) whether any study has been conducted to determine the impact of radioactivity on the families residing near these stations;
(g) if so, the findings of such studies; and
(h) the details of remedial measures taken by the Government in this regard?
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) Yes, Atomic Energy Regulatory Board (AERB) regularly carries out safety review of nuclear power plants. This is done through the process of licensing, regulatory inspections and regular review by safety committees of AERB.

(b) The details of the inspections carried out at Nuclear Power Plants (NPP) during the financial year 2008-09 and 2009-10 are as follows:

S.No.	Nuclear Power Station	Number of inspections carried out by AERB	
		2008-09	2009-10
1	Tarapur Atomic Power Station-1&2	2	2
2	Tarapur Atomic Power Station -3&4	2	2
3	Rajasthan Atomic Power Station-1&2	1	3
4	Rajasthan Atomic Power Station - 3&4	2	2
5	Madras Atomic Power Station-1&2	2	2
6	Narora Atomic Power Station-1&2	4	2

7	Kakrapar Atomic Power Station-1&2	2	2
8	Kaiga Generating Station-1&2	2	3
9	Kaiga Generating Station -3&4	1	2

(c) These inspections are carried out to verify that the plants are being operated in accordance with the conditions specified in the licenses and to verify compliance with safety requirements. Detailed checklists have been developed by AERB for conducting such inspections. AERB carries out the regulatory inspection of operating nuclear power plants normally twice a year. In addition to these, AERB also undertakes special inspections of the plants in response to any specific event or issue.
(d) There was no case of leakage/ release of activity beyond the specified limits in any of the nuclear power plant during the above period.
(e) There is no significant hazard as the radioactive discharges from all the NPPs were well within the specified limits. NPPs are designed and operated ensuring availability of several barriers to release of radioactivity. However, in order to address the unlikely event of any large release of radioactivity from the plant due to any accident, very detailed emergency response plans have been established in co-ordination with AERB and the state authorities concerned. These preparedness plans are tested through periodic exercises to check the response of various agencies involved.
(f) All the nuclear power plant sites have Environmental Survey Laboratories (ESL) which continuously monitor the surrounding environment in the public domain to study the impact of radioactive discharges from these plants. The monitoring involves analyses of samples of water, air, soil, sediment, vegetation, milk, fish, meat etc. collected regularly from these areas. In addition, the radiation levels at various locations surrounding the plant are also monitored by dosimeters.
(g) These studies show that the impact of the radioactive discharges from the NPPs in India on the people and environment surrounding these NPPs is insignificant. The radiation exposure to members of the public around these NPPs is on an average less than 5% of the limit of 1 milli-Sievert per year specified by the AERB, which is based on the guidelines of International Commission on Radiological Protection (ICRP). In this context it may be noted that in India, the average radiation dose received by a person in a year from various natural sources is 2. 4 milli-Sievert.

(h) The discharges from the NPPs are very low and do not pose any hazard. Hence, no remedial actions were necessary.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1746
TO BE ANSWERED ON 04/08/2010

NUCLEAR POWER PLANTS

1746. SHRI ABDUL RAHMAN:
Will the PRIME MINISTER be pleased to state:
(a) the details of requests received by the Union Government from the State Governments for setting up of nuclear power plants during each of the last three ears and the current year, State-wise;
(b) whether the Site Selection Committee (SSC) has evaluated the sites offered by the State Governments;
(c) if so, the details thereof; and
(d) the steps taken by the Union Government for setting up of nuclear power plants on these sites?
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)to(d) Availability of suitable site is a pre-requisite for setting up a nuclear power station. Potential of the sites offered by the state governments are evaluated by the Site Selection Committee of the Department. Government has accorded "in principle" approval for five new sites in Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh and West Bengal in October 2009. The request received state-wise in the last three years and their status is attached. Based on evaluation of the potential of sites and the nuclear power programme, Government of India considers 'in principle' approval of the sites, which is the first step in the process of setting up nuclear power plants.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1753
TO BE ANSWERED ON 04/08/2010

MONITORING RADIOACTIVE WASTE

1753. SHRI BADRUDDIN AJMAL:
SHRI TAKAM SANJOY:
Will the PRIME MINISTER be pleased to state:
(a) whether the Atomic Energy Regulatory Board (AERB) has received any requests from Universities, Institutions, Hospitals and other Departments for inspection or assistance for disposal of their radioactive wastes;
(b) if so, the details thereof;
(c) whether the Government proposes to engage any agency to monitor radioactive bio-waste in the country;
(d) if so, the details thereof and if not, the reasons therefor; and
(e) the steps taken/proposed to be taken by the Government in this regard?
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) Yes sir, such requests are received by AERB periodically.
b) From January 2009 to June 2010, AERB has issued around 400 authorizations to various universities, institutions, hospitals etc for safe disposal of radioactive wastes under the provisions of the Atomic Energy(Safe Disposal of Radioactive Wastes) Rules, 1987. The safe waste disposal methods are based on the physical and chemical form, activity content and half life, water solubility, combustibility etc of the waste. After careful review of the above characteristics AERB allows the safe disposal either at the site of installation itself or an authorized National waste disposal facility. Appropriate transport regulations prescribed by AERB are also enforced during the transport of the radioactive waste prior to its safe disposal.
c) No Sir.
d) As per the provisions of the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987, the monitoring of radioactive wastes is to be carried out by the respective institutions, hospitals, universities etc. No separate agency is required to monitor radioactive bio-waste in the country.
e) AERB carries out inspection of universities, institutions, hospitals etc using radioactive sources to verify compliance to the regulatory requirements pertaining to safe disposal of radioactive wastes.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1772
TO BE ANSWERED ON 04/08/2010

SUPPLY OF URANIUM BY RUSSIA

1772. SHRIMATI SUPRIYA SULE:
Will the PRIME MINISTER be pleased to state:
(a) whether India proposes to have a stake in one of the World's largest uranium fields in Russia;
(b) if so, the details thereof;
(c) whether any agreement to secure long term supply of uranium has been signed with Russia;
(d) if so, the quantum of uranium the country will receive from Russia every year;
(e) the quantum of natural enriched uranium received by the country from Russia during the last fiscal; and
(f) the other steps taken by the Government to set up fifth and sixth units of nuclear power plants in Tamil Nadu?

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) Some discussions in this regard are underway. No precise proposal has been formulated.
(c)&(d) Yes, Sir. A contract has been signed with M/s. TVEL Corporation, Russia for supply of 2000 MT of natural uranium oxide pellets to be supplied in quantities of 200 MT - 400 MT every year.
(e) (i) Natural uranium : 150 MT.
(ii) Enriched uranium : 58 MT
(f) Two more units at Kudankulam, Tamilnadu are planned to be set up during the current plan.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1820
TO BE ANSWERED ON 04/08/2010

ATOMIC PLANT IN GUJARAT

1820. DR. KIRIT PREMJIBHAI SOLANKI:
Will the PRIME MINISTER be pleased to state:
(a) the total number of nuclear power plants in the country particularly in Surat and their power generation capacity Plant wise;
(b) the actual quantum of power generation by these plants, plant-wise;
(c) the reasons for difference, if any, in their capacity and actual generation of power; and
(d) the steps taken by the Government to ensure their full power generation capacity?
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) There are 19 nuclear power reactors with a capacity of 4560 MW in operation in the country, including two reactors KAPS 1&2 (2 x 220 MW) at Kakrapar near Surat. The details are attached.
(b) KAPS Unit 1 was shut down for renovation and modernisation which is nearing completion. Unit 2 is operating at about 60%.

(c) Unit 2 operated at lower power on account of non availability of indigenous natural uranium fuel in the required quantity.

(d) Placement of KAPS-1&2 under International Atomic Energy Agency safeguards in this year and use of imported fuel thereafter will ensure operation of both reactors at full power.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1825
TO BE ANSWERED ON 04/08/2010

PRODUCTION OF NUCLEAR POWER

1825. SHRI MANISH TEWARI:
Will the PRIME MINISTER be pleased to state:
(a) the target set for Nuclear Power production by year 2030;
(b) the investment required to achieve this target;
(c) whether it is a fact that per unit cost of production of the nuclear energy is still higher in the country as compared to thermal and hydro power;
(d) if so, the details thereof;
(e) whether the nuclear power plants are working at less than installed capacity;
(f) if so, the reasons therefor; and
(g) the steps being taken to reduce the per unit cost of production of nuclear energy?
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) The Integrated Energy Policy-2006 envisages possibilities of reaching a nuclear power capacity of 63,000 MW by the year 2032.
(b) The estimated investment is Rs.10 crore/MW at 2010 prices.

(c)&(d) No, Sir. The 2009-10 average nuclear tariff of about Rs.2.30/KWh is quite comparable to thermal power. Nuclear Power is competitive with coal thermal power at locations away from coal mines. Most of hydel power comes from multipurpose dams (costs are shared amongst flood control, irrigation and power); is seasonal, location-specific and not compared for base load needs.
(e)&(f) There are 19 nuclear power reactors (4560 MW) in operation. 7 reactors (1400 MW) use imported fuel and work at full power, 9 reactors (2630 MW) use domestic uranium, of which there is a shortage. These are being operated at maximum of 70% power. Two reactors (440 MW) are awaiting fuel loading after renovation & modernization. One Reactor (RAPS-1-100 MW) is shut down.
(g) Nuclear power reactors are capital intensive and the efforts to optimize cost of generation are directed at optimization of design, longer life, reduction of gestation period, adopting business models & financing strategies to minimize costs, and to operate at high capacity factors.

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1779
TO BE ANSWERED ON 04/08/2010

NUCLEAR POWER PLANTS

1779. SHRI VILAS MUTTEMWAR:
SHRI RAKESH SINGH:

Will the PRIME MINISTER be pleased to state:

(a) the details of nuclear power plants presently functioning in the country alongwith their actual capacity and the quantity of power generated by these plants;
(b) the number of plants closed due to non-availability of uranium for their operations;
(c) the steps taken/proposed to be taken to make available sufficient uranium to these plants for their operations;

(d) whether several nuclear power plants could not be timely commissioned;
(e) if so, the reasons therefor and the actual cost and time overruns of these plants; and
(f) the steps taken/proposed to be taken by the Government to expedite the completion of these plants without further delay?

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) The details are attached.

(b) No reactor has been shut down due to shortage of fuel. However, nine reactors (2620 MW) are being operated at lower power level. In addition, NAPS-2 and KAPS-1, both of 220 MW, after completion of renovation and modernization, have not been restarted due to non availability of fuel.

(c) Resulting out the efforts of the government, there has been an improvement in fuel supply. The efforts on opening of new mines and processing facilities are continuing.

(d)&(e) The details are :

Unit	Capacity (MW)	Commercial Operation Date		Reason for delay
		Scheduled	Actual	
RAPP 5	220	August 2007	February 2010	Non availability of fuel, time taken to access international cooperation.
RAPP 6	220	February 2008	March 2010	
Kaiga-4	220	September 2007	Expected to be operational by 3rd quarter of 2010-11	Non availability of fuel
KK-1	1000	December 2007	Expected to be operational by 4th quarter of 2010-11	Delay in sequential supplies of some of the equipment from Russian Federation.
KK-2	1000	December 2008	Expected to be operational by 2nd quarter of 2011-12	

There is no cost overrun in respect of RAPP 5&6 which have since been commissioned and also Kaiga-4. The revised cost estimates (RCE) of KK 1&2 are being worked out.

(e) The government is making efforts to provide fuel for Kaiga-4 and equipment from Russian Federation in respect of KK 1&2.

ANNEXURE

No.	Unit	Rated Capacity (MW)	Current (July 2010) Operating Capacity
Reactors fuelled by imported Uranium			
1	TAPS-1	160	160
2	TAPS-2	160	160
3	RAPS-2	200	200
4	RAPS-3	220	220
5	RAPS-4	220	220
6	RAPS-5	220	220
7	RAPP-6	220	220
	TOTAL	1400	1400
Reactors fuelled by domestic Uranium - Operated at max 70% of full power			
8	TAPS-3	540	380
9	TAPS-4	540	370
10	MAPS-1	220	140
11	MAPS-2	220	130

12	NAPS-1	220	140
13	KAPS-2	220	130
14	KAIGA-1	220	150
15	KAIGA-2	220	130
16	KAIGA-3	220	150
	TOTAL	2620	1720
Reactors awaiting fuel after Renovation & Modernization			
17	NAPS-2	220	
18	KAPS-1	220	
	TOTAL	440	
Shut down for techno economic assessment on continuation of operations.			
19	RAPS-1	100	
	Total Capacity	**4560**	**3120**

(http://www.dae.nic.in/writereaddata/ls040810.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 413
TO BE ANSWERED ON 29/07/2010

ATOMIC ENERGY PROJECTS IN RAJASTHAN

413 DR. GYAN PRAKASH PILANIA:

Will the PRIME MINISTER be please to state:
(a) the details of 'in-principle' and administrative approval given for new atomic energy generation projects in Rajasthan;

(b) the schedule for starting of work in the above projects; and

(c) the estimated cost of the above projects, project-wise?

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) The Government has accorded administrative approval and financial sanction in September 2009 for setting up 2x700 MW Pressurised Heavy Water Reactors (RAPP 7&8) at Rawatbhata in Rajasthan where presently six reactors (RAPS 1 to 6) are in operation.
(b) Work on this project has commenced.
(c) The estimated completion cost of the project is Rs.12,320 crore.

(http://www.dae.nic.in/writereaddata/rs290710.pdf#page=1)

DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 465
TO BE ANSWERED ON 29/07/2010

COLLABORATION FOR NUCLEAR PLANTS / URANIUM IMPORT

465 : SHRI KALRAJ MISHRA.
WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) Whether it is a fact that the Government is entering into collaboration with many countries for establishing nuclear plants and import of uranium; and

(b) If so, the details in this regard and the stage of negotiations in each case?

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

(a) Yes, Sir.

(b) For setting up nuclear power plants based on technical cooperation, enabling inter-governmental agreements have been signed with France, Russian Federation and the USA. Nuclear Power Corporation of India Limited (NPCIL), a Public Sector Undertaking of the Department of Atomic Energy, is in discussion with the nuclear companies of these countries to finalise respective detailed project proposals. Contracts have been signed with the following foreign firms for import of Uranium:

Sl.No.	Firm/Country	Quantity	Status
1.	M/s. AREVA, France	300 MT of Uranium Ore Concentrate	Already received
2.	M/s. TVEL Corporation, Russia	58 MT of Enriched Uranium Dioxide Pellets	Already received
		2000 MT of Natural Uranium Oxide Pellets, spread over the years in quantities 200-400 MT annually	210 MT received up to mid-July 2010
3.	M/s. NAC Kazatomprom, Kazakhstan	2100 MT of Natural Uranium Ore Concentrate, spread over six	300 MT received up to mid-July 2010

		years in quantities 300-400 MT annually	

(HTTP://WWW.DAE.NIC.IN/WRITEREADDATA/RS290710.PDF#PAGE=1)

RAJYA SABHA

UNSTARRED QUESTION NO.464
TO BE ANSWERED ON 29.07.2010

SHRI N.K.SINGH:

Q.464 NUCLEAR COOPERATION WITH CANADA

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether India has recently concluded an agreement with Canada for cooperation in peaceful uses of nuclear energy;
(b) if so, the details thereof;
(c) whether such an agreement with Canada would be beneficial for India; and
(d) if so, to what extent?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) & (b) Yes. India and Canada concluded an Agreement for Cooperation in Peaceful Uses of Nuclear Energy on 27th June 2010 in Toronto. The Agreement provides for cooperation in peaceful uses of nuclear energy including in the fields of nuclear power generation, agriculture, health care, industry and environment; and nuclear safety, radiation safety and environmental protection.

(c) & (d) Yes. The Agreement will be beneficial for India as it will facilitate bilateral civil nuclear cooperation and trade between India and Canada, both of which have capabilities in advanced nuclear technologies.
(http://meaindia.nic.in/mystart.php?id=100516276)

RAJYA SABHA
UNSTARRED QUESTION NO.459
TO BE ANSWERED ON 29.07.2010

SHRI D. RAJA:
SHRI M.P. ACHUTAN:

Q459. SANCTIONS ON IRAN OVER ITS NUCLEAR PROGRAMME

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether it is a fact that the UN has imposed fresh sanctions against Iran over its nuclear programme;
(b) if so, the details thereof and the countries which have supported this move in the Security Council; and
(c) Government's stand on the issue?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) & (b) Yes. The UN Security Council recently adopted resolution 1929 (2010) on 09 June 2010 expanding sanctions against Iran over its nuclear programme. In the 15-member Security Council, the resolution was supported by 12 members, namely, USA, UK, Russia, France, China, Austria, Bosnia & Herzegovina, Gabon, Japan, Mexico, Nigeria and Uganda. Two members, Brazil and Turkey, voted against the resolution and Lebanon abstained.

(c) India's consistent position has been that Iran must observe all its international commitments as a state party to the Nuclear Non-Proliferation Treaty (NPT). India also believes that Iran has the right to develop nuclear energy for peaceful purposes.
(http://meaindia.nic.in/mystart.php?id=100516270)

RAJYA SABHA

UNSTARRED QUESTION NO. 449
TO BE ANSWERED ON 29.07.2010

SHRI SHIVANAND TIWARI
SHRI RAVI SHANKAR PRASAD:

Q449. PAKISTAN-CHINA NUCLEAR AGREEMENT

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether it is fact that Pakistan and China have signed an agreement for nuclear reactor;
(b) if so, when was the agreement signed;
(c) whether this agreement is against the interests of India; and
(d) the action taken by Government in this regard so far?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) & (b): It has been reported that during Pakistan President Zardari's visit to China in October 2008, China and Pakistan had concluded an agreement for construction of two additional nuclear power plants.

(c) & (d): Government has raised this matter at the official level with China which has responded that its nuclear cooperation with Pakistan is for peaceful purposes, consistent with China's international obligations and subject to IAEA safeguards and supervision. Government continuously monitors developments having a bearing on national security and is committed to taking all necessary steps to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516260)

LOK SABHA

UNSTARRED QUESTION NO.568
TO BE ANSWERED ON 28.07.2010

SHRI P. BALRAM NAIK:
SHRI RAJAIAH SIRICILLA:

Q.568 NUCLEAR ASSETS

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether India dispelled unusual apprehensions about its nuclear assets and spelt out the norms for extending help to Afghanistan in future;
(b) if so, the details thereof; and
(c) the present status of the help thereof?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) to (c) Yes. India is actively engaged in assisting the efforts of the Government of Afghanistan in the reconstruction and development of that country as a means to strengthen capacity of the Afghan state and thereby contributing to peace and stability in Afghanistan. Our assistance programmes in Afghanistan are entirely in accordance with the priorities of the Afghan government and people and are taking place in the areas of humanitarian, infrastructural, institution and capacity building, small scale gestation projects and agriculture. The present status of India's assistance programmes is to place emphasis on capacity building and human resource development.
(http://meaindia.nic.in/mystart.php?id=100516231)

LOK SABHA

UNSTARRED QUESTION NO.490
TO BE ANSWERED ON 28.07.2010

SHRI K.J.S.P. REDDY:

Q.490 INDO-PAK NUCLEAR DETERRENT BALANCE

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether US Secretary of State has said that India and Pakistan have upset nuclear deterrent balance;
(b) if so, the details thereof; and
(c) the reaction of the Government thereupon?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) & (b) Speaking at the University of Louisville on 9th April 2010, the US Secretary of State said, in response to a question, that "Other countries that have pursued nuclear weapons, like India and Pakistan, for example, have done so in a way that has upset the balance of nuclear deterrence, and that is why we are working with both countries to make sure that their nuclear stockpiles are well tended to and that they participate with us in trying to limit the number of nuclear weapons."

(c) India and the US are engaged in an ongoing dialogue as part of the shared commitment to building an enhanced bilateral strategic partnership. This dialogue enables both sides to exchange views on a range of security issues including nuclear non-proliferation and their shared vision of a world free of nuclear weapons.
(http://meaindia.nic.in/mystart.php?id=100516223)

LOK SABHA

STARRED QUESTION NO.50
TO BE ANSWERED ON 28.07.2010

SHRI C. RAJENDRAN:
SHRI RAMESH BAIS:

Q.*50 NUCLEAR AGREEMENT BETWEEN CHINA AND PAKISTAN

Will the Minister of External Affairs be pleased to state:

(a) whether the attention of the Government has been drawn towards the nuclear agreement concluded between China and Pakistan;
(b) if so, the reaction of the Government thereto;
(c) whether the Government has held any talks in this regard with China;
(d) if so, the details and the outcome thereof; and
(e) the steps taken by the Indian Government to safeguard the interests of the country?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) to (d) Yes, Sir. Government's attention has been drawn to reports that during Pakistan President Zardari's visit to China in October 2008, both countries had concluded an agreement for construction of two additional nuclear power plants. The matter was raised at the official level with China, which has responded that its nuclear cooperation with Pakistan is for peaceful purposes, consistent with China's international obligations and subject to IAEA safeguards and supervision.

(e) Government continuously monitors developments having a bearing on national security and is committed to taking all necessary steps to safeguard it.
(http://meaindia.nic.in/mystart.php?id=100516215)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 467
TO BE ANSWERED ON 28/07/2010

PROPOSAL TO SET UP NUCLEAR POWER PLANTS

467 SHRI S. PAKKIRAPPA:
SHRI AHIR VIKRAMBHAI ARJANBHAI MAADAM:
Will the PRIME MINISTER be pleased to state:
(a) the number of nuclear power plants proposed to be set up during the current five year plan period;
(b) the investment expected to be made in each of plants during the above period;
(c) the locations where the nuclear plants would be set up indicating expected production capacity, plant-wise; and
(d) the time by which such nuclear plants would start producing power?

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) In addition to three nuclear power plants (2720 MW) under advanced stage of completion and two plants (2800 MW) on which work has been just launched, the Mid Term Appraisal of the XI plan envisages commencement of work on six plants during the current plan.
(b) &(c) The details are as follows

Location District / State	Capacity (MW)	Outlay in XI Plan (` in Crore)
Tirunelveli, Tamilnadu	2 X 1000	1653
Ratnagiri, Maharashtra	2 X 1650	1411
Srikakulam, Andhra Pradesh	2 X 1000 *	851
Bhavnagar, Gujarat	2 X 1000 *	850
Fatehabad, Haryana	2 X 700	101
Mandla, Madhya Pradesh	2 X 700	101

* Nominal capacity

(d) The plants will start producing power in about six years from start of work.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 527
TO BE ANSWERED ON 28/07/2010

CENTRE FOR RADIO ECOLOGY

527. SHRI PRADEEP MAJHI:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to set up Centre for Radio Ecology;
(b) if so, the details of the funds allocated and expenditure incurred so far in setting up of said Centre;
(c) whether the progress of work of this Centre is going as per the schedule;
(d) if so, the details in this regard; and
(e) if not, the reasons therefor and the remedial measures taken by the Government in this regard?

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) Yes, Sir. The Radio-ecology Center is being established at Guru Jhambeshwar University of Science & Technology (GJUST) at Hisar, Haryana.

(b) Funds to the extent of `4.62 crore is allocated and an expenditure of `30.00 lakh has been incurred so far.

(c) Yes, Sir.

(d) Equipment have been purchased, laboratory has been constructed, and Junior Research Fellows have been recruited for this centre.

(e) Does not arise, in view of (d) above.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 546
TO BE ANSWERED ON 28/07/2010

ASSESSMENT OF NUCLEAR WASTE

546 SHRI P.T. THOMAS:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has recently assessed the quantity of nuclear waste likely to be generated by the nuclear power plants in the country;
(b) if so, the details thereof, Plant-wise and State-wise; and
(c) the manner in which the Government proposes to dispose of this waste?

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) to (c) The wastes generated at the nuclear power stations during their operation are of low & intermediate activity level and are managed at the site itself. These wastes are treated, concentrated, compacted, immobilized in solid materials like cement, bitumen, polymers etc. and stored in specially constructed structures such as reinforced concrete trenches and tile holes, located at the site. Such facilities are located at all the nuclear power stations viz. Tarapur (Maharashtra), Rawatbhata (Rajasthan), Kalpakkam (Tamilnadu), Narora (Uttar Pradesh), Kakrapar (Gujarat) and Kaiga (Karnataka). The waste to be stored at site during the life time including decommissioning is within 0.15 cubic meters/year/MW.
Spent nuclear fuel from unsafeguarded reactors is sent back to BARC for reprocessing and for management of high level (radioactive) waste. High level waste is vitrified into a glassy form, contained in multiple barrier containers and stored for an interim period of three to four decades in engineered vaults with necessary surveillance facilities. After cooling down in these storage facilities, waste containers will be stored for long term in deep geological repositories.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 547
TO BE ANSWERED ON 28/07/2010

AGREEMENT WITH CANADA

547. SHRI SANJAY SINGH CHAUHAN:
SHRIMATI ANNU TANDON:
SHRI NEERAJ SHEKHAR:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has signed any civil nuclear agreements with Canada for supply of uranium and transfer of reprocessing technology;
(b) if so, the details thereof and terms and conditions of the agreements;
(c) the fields in which the uranium and such technology are likely to be utilized;
and
(d) the time by which a final agreement under the said pact is likely 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) to (d) The Agreement between the Government of the Republic of India and the Government of Canada for Cooperation in Peaceful Uses of Nuclear Energy has been signed on 27 June 2010. The Agreement has not yet entered into force.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 563
TO BE ANSWERED ON 28/07/2010

INTERNATIONAL COOPERATION IN NUCLEAR FIELD

563 SHRI HANSRAJ G. AHIR:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government has received any requests from foreign companies including American Companies for initiating civil nuclear energy trade agreements with Indian companies; and
(b) if so, the details of such companies, country-wise?

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) The Government has signed Inter-Governmental Agreements / Memorandum of Understanding/Joint Declaration for cooperation in nuclear energy with Canada, France, Mongolia, Namibia, Russia, UK and USA.
Indian companies are now in a position to establish contacts with foreign companies in the area of civil nuclear cooperation. Nuclear Power Corporation of India Ltd. (NPCIL) is currently engaged in discussions with Atomstryexport (ASE) of Russian Federation, AREVA of France, GE Hitachi Nuclear Energy (GEH) & Westinghouse Electric Company (WEC) of the USA on setting up Light Water Reactors (LWRs) based on technical cooperation.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 573
TO BE ANSWERED ON 28/07/2010

INDO-JAPAN CIVIL NUCLEAR AGREEMENT

573 SHRI A.T. NANA PATIL:
Will the PRIME MINISTER be pleased to state:
(a) whether the Indo-Japan civil nuclear agreement has been recently signed;
(b) if so, the salient features of the agreement;
(c) whether the Japan has agreed to transfer nuclear technology to India;
(d) if so, the details thereof; and
(e) the steps being taken by the Government to strengthen the co-operation with Japan?

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) No Sir.
(b) does not arise.
(c) No Sir.
(d) does not arise.
(f) The first round of formal negotiations between India and Japan on civil nuclear cooperation Inter-Governmental Agreement was held in Tokyo on 28-29 June 2010.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 588
TO BE ANSWERED ON 28/07/2010

RADIOACTIVE MATERIAL

588 PROF. (DR.) RANJAN PRASAD YADAV:
Will the PRIME MINISTER be pleased to state:
(a) whether any regulations exist for installing, operating, transporting or decommissioning radioactive materials/ devices in the country;
(b) if so, the details thereof; and
(c) the steps taken to avoid Cobalt-60 pencils like incidents at Mayapuri in future?

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) Yes, Sir.
(b) Atomic Energy (Radiation Protection) Rules, 2004 and Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987 promulgated under the Atomic Energy Act, 1962, and Safety Standards, Codes published by Atomic Energy Regulatory Board (AERB) made thereunder provide necessary frame work of regulations pertaining to installation, operation, decommissioning, disposal and transport of devices containing radioactive material.
(c) Several actions have been taken by AERB and other Government agencies to prevent incidents like Mayapuri. Some of the steps taken are:
i. Installation of Radiological Detection Equipments (RDEs) at entry/exit of airports, sea-ports, inland container depots and other land ports.
ii. Further efforts to bring legacy sources (which may have been in existence from periods when regulatory controls were still in the evolving stage) under regulatory control by scanning old records.

iii. Updating the inventory of sources based on inputs from various Government departments/agencies, source suppliers, response to advertisement issued in newspapers, etc.
iv. Increase in the number of awareness programmes pertaining to radiation safety in various areas in the country. Members of scrap association have been sensitized to monitor scrap for radiation. On May 6, 2010 AERB organized an awareness programme for scrap dealers and workers of Mayapuri scrap market. In this program, more than 150 participants were familiarized with the use of radiation monitors.
v. The requirement of pre-shipment inspection certificate for consignments imported to India declaring that they do not contain any type of hazardous, toxic waste, radioactive contaminated waste has been notified.

vi. Enhanced regulatory control by increasing frequency of inspection and establishment of Regional Centres of AERB.

http://www.dae.nic.in/writereaddata/ls280710.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 590
TO BE ANSWERED ON 28/07/2010

DISPOSAL OF NUCLEAR WASTES

590 SHRI M.B. RAJESH:
SHRI RAKESH SINGH:
Will the PRIME MINISTER be pleased to state:
(a) whether adequate arrangements have been made for the disposal of nuclear wastes from hospitals, research establishments and other sources in the country;
(b) if so, the details thereof;
(c) whether norms have been found to be over looked in the case of the incident of radiation emission from a scrap shop in Delhi recently;
(d) if so, the details thereof;
(e) whether the Government has taken any steps to check recurrence of such incidents in the country; and
(f) if so, the details thereof and if not, the reasons therefor?

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) Yes, sir.
(b) The radioactive wastes generated from the hospitals, research establishments and other institutions are safely disposed off as per provisions of Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987. The radioactive sources used in these establishments are either sealed sources such as those used for radiotherapy or unsealed sources such as those used in nuclear medicine.
As per the requirement of Atomic Energy Regulatory Board (AERB), the sealed sources after they become unusable, have to be returned to the original supplier for disposal. For transport of these sources from user to supplier, authorization from AERB is needed to ensure safety during transport. Once the transport is complete it is necessary to inform AERB. In some cases, particularly when the source has been supplied long ago by a foreign supplier, it may not be possible to return it as required. In such cases, AERB helps the user for disposal of the source to an authorized waste management agency.
The unsealed sources used in medicine and research are mostly in liquid form, have short half-life and are used in small quantities. These sources after their use, are disposed off either by dilution and dispersion or are stored till their activity decays to an acceptable level for discharge. Unsealed sources with longer half-life need special attention for their disposal after use. Wastes containing such sources are diluted to levels below the authorized limits for disposal and discharged to the environment.

In all the above cases, authorization for disposal is required to be obtained from AERB as per the aforesaid rules.
(c) Yes, sir.
(d) The incident was caused by the unauthorized disposal of the gamma cell by Delhi University as scrap which violates the Atomic Energy (Safe Disposal of Radioactive Waste) Rules and Atomic Energy (Radiation Protection) Rules.
(e) Yes, sir.
(f) Several actions have been taken by AERB and DAE as well as other departments and ministries to prevent incidents like Mayapuri. Some of the steps taken are :

- Installation of radiation detection systems at entry/exit of airports, sea-ports, inland container depots and other land ports.
- Further efforts to bring legacy sources (which may have been in existence from periods when regulatory controls were still in the evolving stage) under regulatory control by scanning old records.

- Updating the inventory of sources based on inputs from :

o Ministry of HRD / UGC
o Ministry of Health
o Ministry of Industries
o Coal Authority of India Ltd.
o Oil and Natural Gas Commission
o Source suppliers and
o Response to advertisements issued in newspapers

- Increase in the number of awareness programmes pertaining to radiation safety in various areas in the country. Members of scrap association have been sensitized to monitor the scrap for radiation. On May 6, 2010 AERB organized an awareness programme for scrap dealers and workers of Mayapuri scrap market. In this program, more than 150 participants were familiarized with the use of radiation monitors.

- The requirement of pre-shipment inspection certificate for consignments imported to India declaring that they do not contain any type of hazardous, toxic waste, radioactive contaminated waste has been notified by concerned ministry.

- Enhanced regulatory contr ol by increasing frequency of inspections and establishment of Regional Centres by AERB.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 616
TO BE ANSWERED ON 28/07/2010

CONTRIBUTION OF ATOMIC ENERGY IN GENERATION OF ELECTRICITY

616 SHRI BAL KUMAR PATEL:
SHRI HARISHCHANDRA CHAVAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the contribution of atomic energy is very less in the total generation of electricity in the country;
(b) if so, the reasons therefor and the position of India in generation of atomic energy as compared to the other countries of the world;
(c) whether the generation capacity of the atomic energy plants is less in the country; and
(d) if so, the reasons therefor and the steps taken by the Government to increase the generation of atomic energy in the country?

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) The share of nuclear power in the total electricity generation in the country is about 2.6%.
(b) The lower share of nuclear power is on account of relatively small capacity base of 4,560 MW of the total installed capacity of 1,62,366 MW. The share of nuclear generation in some other countries in the world is: France 75%, Korea 35%, Japan 29%, Germany 26%, USA 20%, Russian Federation 18% and China 2%.
(c) Yes, Sir.
(d) The nuclear power capacity of 4560 MW is expected to reach 7280 MW by 2012 and 10080 MW by 2017 with the progressive completion of projects under construction. More projects are also planned in future to increase the nuclear power capacity.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.617
TO BE ANSWERED ON 28/07/2010

DELAY IN KUDANKULAM POWER PLANT

617 SHRIMATI MANEKA GANDHI:
Will the PRIME MINISTER be pleased to state:
(a) whether there is delay in commercial operation of Kudankulam Nuclear Power Project in Tamil Nadu;
(b) if so, the reasons for the delay;
(c) whether delay in delivering critical components by Russia is one of the main reasons;
(d) if so, the actual cost overrun of the project; and

(e) the time by which the plant is likely to be made operational?

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) Yes, Sir.
(b) The project design is a first-of-its-kind improved version. The design evolution in parallel with construction resulted in late ordering of manufacturing and supply of equipment. Major equipment/components for the project are to be supplied by Russian Federation. There has been a delay in sequential supply of some of the equipment affecting the project construction schedule.
(c) Yes, Sir.
(d) Revised cost estimates are being worked out.
(e) The effort is to complete Unit 1 during the last quarter of the current year followed by second unit completion in about six months time.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 680
TO BE ANSWERED ON 28/07/2010

INSTALLATION OF RADIATION MONITOR PORTAL AT PORTS

680. SHRI BAIJAYANT JAY PANDA:
SHRI NITYANANDA PRADHAN:
Will the PRIME MINISTER be pleased to state:
(a) whether the Government proposes to install radiation monitor portals at all the ports and entry points in the country;
(b) if so, the details thereof;
(c) whether the Government has prepared any action plan to check junk metal lying in various scrap markets in the country especially in the national capital city to ward off any incident of radiation leak;
(d) if so, the details thereof; and

(e) the time by which the action plan is likely to be implemented?

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) Yes, Sir. There is a proposal to install Radiological Detection Equipments (RDEs) at entry/exit points of the country.
(b) The Ministry of Home Affairs is coordinating this activity. Electronics Corporation of India Limited (ECIL) has plans to supply radiation portal monitors.
(c) Yes, Sir.
(d) The installations of radiation portal monitors are planned at entry and exit ports of the country to prevent any inadvertent radioactive material reaching scrap markets or steel foundries.
(e) The above measures are already being implemented.

(http://www.dae.nic.in/writereaddata/ls280710.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4461
TO BE ANSWERED ON 06/05/2010
ATOMIC POWER PLANTS IN ANDHRA PRADESH
4461 SHRI GIREESH KUMAR SANGHI:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether there are proposals under consideration of Government to set-up more atomic power plants in the country;
(b) if so, the details thereof;
(c) whether there is any proposal to set-up an atomic power plant in Andhra Pradesh;
(d) if so, the details thereof; and
(e) if not, the reasons therefor?

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) The nuclear power capacity is planned to be increased by setting up nuclear power reactors in different parts of the country, the Government has in principle approved six greenfield sites and pre project activities are in progress.
(c) to (e) The Government has in principle approved a site at Kovvada, Srikakulam district of Andhra Pradesh. This site is approved for setting up light water reactors in cooperation with the USA. Two reactors of 1000 MW or higher capacity are proposed to be set up in the first instance. This will be followed up with setting up additional twin units with a time gap of about 3 years.

(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4462
TO BE ANSWERED ON 06/05/2010
TRADE IN CIVIL ATOMIC ENERGY
4462 SHRI RAJ MOHINDER SINGH MAJITHA:
SHRI RAVI SHANKAR PRASAD:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether it is a fact that American companies trading in atomic energy sector have requested the Government of India that Atomic Liability Act be passed in the country, only after that these companies would start trade with India in Civil atomic energy;
(b) if so, the facts in this regard along with names of the American companies with whom discussion has been held for conducting trade in this sector in India till now; and
(c) the reasons given these companies behind the request?

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) to (c) - Companies from the United States and other supplier countries require India to be a part of a nuclear liability regime in line with established international practices. Nuclear Power Corporation of India Ltd. (NPCIL) has signed Memoranda of Understanding with GE Hitachi Nuclear Energy (GEH) and Westinghouse Electric Company (WEC) of the USA for cooperation for setting up of nuclear power reactors.

(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4463
TO BE ANSWERED ON 06/05/2010
IAEA'S DEMAND FOR DISCLOSING INDIA'S STOCKPILES
4463 SMT. T. RATNA BAI:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether there had been a demand by the International Atomic Energy Agency(IAEA) to India to come out with enhanced data on their stockpiles, demand and supply situation;
(b) if so, the details thereof;
(c) the comments of Government thereupon; and
(d) the present status 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):
(a) to (d) - An agreement between the Government of India and the International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities was signed on 02 February 2009 and entered into force on 11 May 2009. In accordance with India's Separation Plan, 10 nuclear power reactors and 6 other facilities have so far been offered for Safeguards. The implementation of IAEA Safeguards at these reactors /facilities is in accordance with the terms of the Safeguards Agreement.

(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4464
TO BE ANSWERED ON 06/05/2010
PRODUCTION OF NUCLEAR POWER
4464 SHRI VIJAY JAWAHARLAL DARDA:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether India's perspective planning is production of 20,000 MW of nuclear power by 2020;
(b) if so, whether the existing nuclear reactors would be able to produce this 20,000 MW power or new reactors would be installed; and
(c) whether the technology being used for production of power is keeping pace with the emerging state-of-the-art technologies being evolved in the fast changing global scenario?

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) Yes, Sir.

(b) The present capacity of reactors in operation and under construction is 10080 MW. New reactors, both based on indigenous technology and international cooperation are planned to be set up.

(c) Yes, Sir.

(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4465
TO BE ANSWERED ON 06/05/2010
GLOBAL CENTRE FOR NUCLEAR ENERGY PARTNERSHIP
4465 SHRI BHAGAT SINGH KOSHYARI:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether Government has finalized the layout for Global Centre for Nuclear Energy Partnership;
(b) by when this association is proposed to start;
(c) the kind of countries that have been planned to be included in this exclusive club; and
(d) 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):
(a) to (d) - At the Nuclear Security Summit in Washington, Prime Minister, on 13 April 2010, has announced setting up a 'Global Centre for Nuclear Energy Partnership', a state of the art facility based on international participation from the International Atomic Energy Agency and other interested foreign partners, in India. Setting up of the Centre would be in a phased manner.
(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4466
TO BE ANSWERED ON 06/05/2010
CENTRE FOR RADIO ECOLOGY
4466 SHRI NAND KUMAR SAI:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether Government proposes to set up Centre for Radio Ecology;
(b) if so, the details of the funds allocated and expenditure so far incurred in setting up of said centre,
(c) whether the progress of work of this centre is going as per the schedules;

(d) if so, the details in this regard, and
(e) the time by which the said centre would be operational?

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) Yes, sir.
(b) Funds to the extent of Rs.4.62 crore is allocated and an expenditure of Rs.30.00 lakh has been incurred so far.
(c) Yes, sir.
(d) Equipments have been purchased, laboratory has been constructed, and Junior Research Fellows have been recruited for this centre. Work is progressing well.
(e) The Centre would be fully operational by the end of 2010.

(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 4467
TO BE ANSWERED ON 06/05/2010
NUCLEAR POWER GENERATION BY NTPC-NPCIL JOINT VENTURE
4467 DR. T. SUBBARAMI REDDY :

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether the Central Government has decided to plan to allocate a site for the development of a new capacity to the national Thermal Power Corporation (NTPC) –Nuclear Power Corporation of India (NPCIL) joint venture for entering into nuclear power generation business;
(b) if so, whether sites have already been identified and by what time a final decision in this regard is likely to be taken; and
(c) if so, the other sites which are being allotted to develop nuclear capacity in the country?

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) The Agreement between few PSUs for formation of Joint Venture Company (JVC) has been signed on 27.04.2010. Further action for incorporation of JVC and constitution of its management board will follow. The JVC will decide type of reactor to be set up before a decision on allocation of a site for proposed JVC is taken.

(c) The Government has accorded 'in principle' approval for six greenfield sites in Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra and West Bengal for locating future nuclear power plants.

(http://www.dae.nic.in/writereaddata/rsus060510.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO : 563
TO BE ANSWERED ON 05/05/2010
COMMERCIAL OPERATION OF NUCLEAR POWER
***563 SHRI M.K.RAGHAVAN:**
SHRI SIVASAMI C:

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether the Government has identified green field sites for commercial operation of nuclear power plants/projects in the country;
(b) if so, the details thereof including the locations identified for the purpose, State-wise and the time by which the projects are likely to be operationalised;
(c) the expected nuclear power generation after the completion of these plants/projects; and
(d) the steps taken by the Government to expedite commercial operation of the proposed nuclear power plants?

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) to (d) A statement is placed on the table of the House.
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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. 563 DUE FOR ANSWER ON 05.05.2010 BY SHRI M. K. RAGHAVAN AND SHRI SIVASAMI. C REGARDING COMMERCIAL OPERATION OF NUCLEAR POWER.

(a)&(b) The Government has accorded 'in principle' approval for six greenfield sites in Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra and West Bengal for locating future nuclear power plants. The projects will be executed in phases with two reactors at a site in the first phase. The generation of power from the first phase reactors is expected in the XIII Plan.

(c) The current nuclear power capacity of 4560 MW will reach 10,080 MW by completion of ongoing projects by 2017 progressively. The sites approved by the Government have a potential of reaching a total Nuclear power capacity of 46000 MW which will be progressively utilized.

(d) Pre-project activities including public awareness campaigns to educate the surrounding population, state officials, journalists and other stake holders, land acquisition, obtaining statutory clearances, site investigations for obtaining design inputs & establishment of site infrastructure have commenced and are being expedited to enable early start of work at the sites.

(http://www.dae.nic.in/writereaddata/lssq050510_563.pdf)

LOK SABHA

UNSTARRED QUESTION NO.6550
TO BE ANSWERED ON 05.05.2010

SHRI ASHOK KUMAR RAWAT:

Q.6550 PAKISTAN SETTING UP NUCLEAR PARK

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether Pakistan Government is preparing to set up a Nuclear Park;
(b) if so, the details thereof; and
(c) the reaction of the Government thereto?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S. M. KRISHNA)

(a) to (c) Government has seen press reports about Pakistan's interest in setting up "Nuclear Parks" as a means to attract foreign investors interested in setting up private nuclear power plants. The stated reason for this is to meet the country's growing energy requirements. (http://meaindia.nic.in/mystart.php?id=100515983)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 6416
TO BE ANSWERED ON 05/05/2010

6416 SHRI SONAWANE PRATAP NARAYANRAO:
SHRI SHIVARAMA GOUDA:
SHRI KAUSHALENDRA KUMAR:

SUICIDE AMONG SCIENTISTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the details of the cases of suicide by the scientists and employees of the various atomic research centres of Department of Atomic Energy during the last three years and the current year, year-wise and centrewise;
(b) whether the Government has conducted any enquiry/registered cases in this regard;
(c) if so, the outcome thereof;
(d) whether the Government proposes to take necessary preventive measures to protect the lives of scientists posted at sensitive places; 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):
(a) The details are furnished in the attached Annexure.
(b) & (c) All the cases have been reported to the nearest police station and the Police are conducting investigations.
(d) & (e) The Scientists & Employees of the Deportment are provided with excellent living conditions and career opportunities. The Scientific and Technical promotions in the Department are governed by the Merit Promotion Scheme and are not vacancy based. Compulsory health care facilities are provided covering all disciplines including mental help, social welfare services counseling and psychiatry. This covers both employees and their families. Cultural and recreational activities are also conducted regularly. Adequate physical protection measures are provided both at the residential complex & at work sites.

S.No	Name	Designation	Unit to which belongs	Date of incident
2008				
N I L				
2009				
1	Shri R. Devan	Helper-B (C)	Indira Gandhi Centre for Atomic Research, Kalpakkam (IGCAR)	13.04.2009
2	Shri K. Kasinathan	Foreman-A	IGCAR	31.10.2009
2010				
1	Shri Anantha Narayan	Scientific Officer-E	IGCAR	15.02.2010
2	Ms. Titas Pal	Scientific Officer-C	Bhabha Atomic Research Centre, Trombay (BARC)	03.03.2010
3	Shri Ashutosh Sharma	Scientific Assistant-C	BARC	08.03.2010
4	Shri Subash Sonaji Sonawane	Tradesman/F	BARC	23.04.2010
5	Shri Akshay P. Chavan	Lower Division Clerk	BARC	30.04.2010
6	Shri M. Tirumala Prasad Tenka	Scientific Officer-D	Raja Ramanna Cente for Advanced Technology, Indore (RRCAT)	10.04.2010

(http://www.dae.nic.in/writereaddata/lsus050510.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 6433
TO BE ANSWERED ON 05/05/2010
6433 SHRI WAKCHAURE BHAUSAHEB RAJARAM:

NUCLEAR TEST

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has decided not to conduct nuclear tests in future;
(b) if so, the details thereof;
(c) whether the country has become self-reliant in nuclear power; and
(d) if not, the reasons therefor?

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) After the 1998 nuclear tests Government has declared a unilateral moratorium on nuclear tests. This was reiterated by Shri Pranab Mukherjee, the then Hon'ble External Relations Minister on 6th September, 2008 wherein he interalia reiterated India's stand on disarmament and non-proliferation. He said "We remain committed to a voluntary, unilateral moratorium on nuclear testing. We do not subscribe to any race, including a nuclear arms race. We have always tempered the exercise of our strategic autonomy with a sense of global responsibility. We affirm our policy of no-first-use of nuclear weapons."
(c) & (d) India is self reliant in nuclear power and in the nuclear fuel cycle. Limited uranium reserves are the hurdle to achieving much needed faster growth of nuclear power generation. Import of uranium and setting up of nuclear reactors in co-operation with foreign vendors will help us in achieving rapid growth in the near future.

(http://www.dae.nic.in/writereaddata/lsus050510.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 6501
TO BE ANSWERED ON 05/05/2010
6501 SHRI S SEMMALAI:

PLF OF NUCLEAR POWER GENERATION

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Plant Load Factor (PLF) of Nuclear Power Plants has come down to 60% during the current year;
(b) if so, the details thereof and the reasons therefor; and
(c) the steps taken or being taken by the Government to meet the fuel shortage?

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) The Plant Load Factor(PLF) of nuclear power plants in operation in the year 2009-10 was 61%

(b) There are 19 nuclear power reactors with a capacity of 4560 MW in operation in the country. Out of these, 5 reactors of 960 MW use imported uranium and are being operated at high PLFs. 14 nuclear power reactors are fuelled by domestic uranium which is not available in the required quantity. These reactors are being operated at lower power levels to match the fuel availability, resulting in lower average PLF.

(c) The Government has taken a series of measures to augment the fuel supply from domestic sources and through imports for fueling reactors under safeguards, which have resulted in increase in average annual PLF from 50% in 2008-09 to 61% in 2009-10. The uranium prospecting, exploration, mining and commissioning of processing mills thereof is an ongoing endeavor and the resulting augmentation of domestic uranium supplies are expected to improve the PLF of nuclear power plants progressively.

(http://www.dae.nic.in/writereaddata/lsus050510.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 6553
TO BE ANSWERED ON 05/05/2010
6553 SHRI NIKHIL KUMAR CHOUDHARY:

IMPORT OF URANIUM

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has signed any agreement with foreign countries to ensure regular supply of uranium to the nuclear reactors in the country;
(b) if so, the details thereof, countrywise;
(c) whether the Government proposes to import uranium from Australia who are largest producer of uranium; and
(d) if so, the quantity of uranium imported from Australia during the last three years?
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) Yes, Sir. Contracts have been signed with France, Russia and Kazakhstan for supply of Uranium. The details of the contract are detailed below :-

(b)

Sr No	Country	Details of contract
1.	France	300 MT of Uranium Ore Concentrates
2.	Russia	2000 MT Natural Uranium Oxide Pellets spread over a period of five to six years; and 58 MT of enriched Uranium Dioxide Pellets
3.	Kazakhstan	2100 MT of Natural Uranium Ore Concentrate, spread over six years

(c) & (d) No, Sir.

(http://www.dae.nic.in/writereaddata/lsus050510.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 6567
TO BE ANSWERED ON 05/05/2010
6567 SHRI NITYANANDA PRADHAN:
SHRI BAIJAYANT JAY PANDA:

URANIUM IN MEGHALAYA

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Meghalaya region has a good potential of Uranium;
(b) if so, the details thereof alongwith the quantity of Uranium likely to be extracted from the region;
(c) whether the production of Uranium from the region will be sufficient to meet the requirements of Nuclear Plants in the country;
(d) if so, the details thereof; and
(e) the action taken or being taken by the Government to extract uranium from the region including the time by which the production is likely to commence?

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) Yes, Sir.
(b) Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy has identified 17,252 tonnes of high grade insitu Uranium resources in Meghalaya.
(c) At full capacity production from the proposed uranium project at Kylleng Pyndengsohiong Mawthabah, West Khasi Hills District, Meghalaya, it is expected to meet about 20% of the indigenous requirement.
(d) & (e) Uranium Corporation of India Limited (UCIL), a Public Sector Undertaking under the Department of Atomic Energy (DAE), proposes to set up a mine and mill at Kylleng Pyndengsohiong Mawthabah in the West Khasi Hills district in Meghalaya. Various pre-project activities are being carried out and project will commence only after receipt of all statutory clearances from State and Central Governments. No definite time frame can be set for obtaining these clearances.

(http://www.dae.nic.in/writereaddata/lsus050510.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 6575
TO BE ANSWERED ON 05/05/2010
6575 SHRI D.B. CHANDRE GOWDA:
SHRIMATI SUPRIYA SULE:

PRIVATE INVESTMENT IN NUCLEAR POWER SECTOR

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Prime Minister's economic advisory panel has suggested that nuclear power sector should be opened to private investments which would help the power-starved economy to grow on a sustained basis;
(b) if so, the details thereof;
(c) whether the panel has also pointed out that there is an urgent need to make regulatory changes so that investment including from established private companies interested in the business can begin to flow;
(d) if so, the details thereof and the suggestions recommended by the panel and the reaction of the Government thereto; and
(e) the steps taken or being taken by the Government in this regard?

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) Yes, Sir. The Economic Advisory Council to the Prime Minister in its "Economic Outlook for 2009-10" of October 2009 and in the "Review of the Economy 2009-10" of February, 2010 has recommended private sector participation in nuclear power sector.

(c) Yes, Sir. The Council has recommended amendment of the Atomic Energy Act, 1962 so as to permit the entry of reputable private companies in the nuclear power sector.
(d) & (e) The Atomic Energy Act, 1962 gives power to Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government company in which not less than 51% of the paid up share capital is held by the Central Government. At present Indian private sector can participate in nuclear power generation projects as a minority partner. For the present participation of Indian private sector in nuclear power generation projects will continue to be as per the existing provisions of Atomic Energy Act, 1962.
Amendments to Atomic Energy Act has to be done in a careful manner after a detailed examination of all issues, including nuclear safety, physical security and international commitments.

(http://www.dae.nic.in/writereaddata/lsus050510.pdf#page=9)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 3686
TO BE ANSWERED ON 29/04/2010
3686 SHRI D. RAJA
SHRI R.C. SINGH:
SHRI T.K. RANGARAJAN

RADIATION LEAKAGE IN MAYAPURI

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government's attention has been drawn to the incident of radiation leakage at a scrap market in Mayapuri Phase II, Delhi;;
(b) if so, the details thereof and the steps that are being taken for better treatment of the victims;
(c) whether any enquiry has been conducted into the incident; 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):
(a) & (b) Yes, Sir.
The Government is aware of the incident of discovery of radiation sources in the scrap market in Mayapuri, Delhi. Experts from Atomic Energy Regulatory Board (AERB), Bhabha Atomic Research Centre (BARC), other units of Department of Atomic Energy (DAE), National Disaster Management Authority (NDMA) and National Disaster Response Force (NDRF) have surveyed the area and recovered all the exposed radiation sources. After recovery operations, the area was surveyed again to ensure that elevated radiation levels do not exist.
Seven persons who have been affected by radiation were admitted to various hospitals in Delhi and the doctors from these hospitals are in continuous communication with the medical officers of Bhabha Atomic Research Centre, Mumbai. One person died in hospital on 26.04.2010.
(c) & (d) As a first step, the recovered sources were examined at Narora Atomic Power Station (NAPS). Preliminary examinations have revealed that the sources have not been fabricated in India. Further investigations are underway to identify the origin of the scrap which contained these sources.

(http://www.dae.nic.in/writereaddata/rsus290410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 3687
TO BE ANSWERED ON 29/04/2010
3687 SHRI N.K. SINGH:

RADIATION EXPOSURE IN DELHI

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether a large number of people with symptoms of radiation exposure fallen ill recently in Delhi;
(b) If so, whether radioactive waste, Cobalt-60 was detected at a shop of scrap dealer in Delhi;
(c) If so, whether the Scientists from Bhabha Atomic Research Centre (BARC) and Narora Atomic Power Plant have tried to sanitise the place where radioactive waste was lying; and
(d) If so, the facts thereof and responsibility fixed by Government for this negligent attitude?

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) So far a total of seven persons have reported to various hospitals in Delhi with symptoms showing signs of exposure to radiation. One person has died in hospital on 26.04.2010.
(b) Radioactive material, Cobalt-60 sources were detected at a few scrap shops in Delhi.
(c) & (d) The scientists from Atomic Energy Regulatory Board (AERB), Bhabha Atomic Research Centre (BARC), Narora Atomic Power Station (NAPS) and National Disaster Response Force (NDRF) have conducted surveys of the metal scrap shops in Mayapuri Industrial area where in the first person, dealer of scrap, was found with suspected radiation exposure symptoms. In this survey a total of 8 sources were detected and safely removed in shielded containers. Subsequently, three more sources were recovered from the same area. Subsequent radiation surveys carried out have confirmed the area to be safe from radiological safety considerations.
The recovered Cobalt-60 sources were sent to Narora Atomic Power Station for examination and to identify their origin. Preliminary examinations indicate that the sources have not been fabricated in India. Further investigations are in progress to identify the origin of scrap which contained the sources.

(http://www.dae.nic.in/writereaddata/rsus290410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 3688
TO BE ANSWERED ON 29/04/2010
3688 SHRI VIJAY JAWAHARLAL DARDA:

CAPACITY UTILISATION FACTOR OF NUCLEAR REACTORS

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) the capacity utilization factor in respect of nuclear reactors which were functioning during 2008 and 2009;
(b) the electricity production profile of our nuclear power plants, plant-wise, during 2008-2009;
(c) whether any consignment of uranium has been received from countries with whom India entered into agreements consequent upon lifting the three -decade-old sanctions on India's nuclear commerce; and
(d) the projections of import of uranium during 2010?;

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) The capacity Factor of nuclear power reactors in operation during the years 2008-09 and 2009-10 was 50% and 61% respectively.

(b) The details are attached.

(c) Yes Sir. The uranium received from different countries is as given below:

France - 300 MT of natural uranium
Russia - (i) 120 MT of natural uranium during 2009 and
30 MT of natural uranium in March 2010
(ii) 58 MT of enriched uranium for Tarapur 1 and 2 Light Water Reactors.
(d) The projections of import of uranium during 2010 are as given below:

Kazakhstan - 300 MT of natural uranium
Russia - 210 MT of natural uranium (30 MT already received in March 2010)

Performance of the nuclear power plants for the year 2008-09 & 2009-10:

Sl. No	Unit	Rated Capacity (MW)	Rated Capacity (MW)	
			2008-09	2009-10
Reactors fuelled by Imported Uranium				
1	TAPS-1	160	1007	1199
2.	TAPS-2	160	1349	1251
3.	RAPS-21	200	-	950
4.	RAPS-54	220	-	301
5.	RAPS-65	220	-	3
	Total	**960**	**2356**	**3704**
Reactors fuelled by domestic Uranium (operated at maximum 70% of Full Power)				
6.	TAPS-3	540	1923	2787
7.	TAPS-4	540	2030	2754
8.	RAPS-3	220	1156	1277
9.	RAPS-4	220	1303	1143
10.	MAPS-1	220	732	938
11.	MAPS-2	220	785	1108
12.	NAPS-1	220	741	818
13.	NAPS-22	220	-	-
14.	KAPS-13	220	259	-
15.	KAPS-2	220	954	1068
16.	KAIGA-1	220	1157	1011
17.	KAIGA-2	220	1079	1111
18.	KAIGA-3	220	452	1112
	Total	**3500**	**12571**	**15127**
Shut Down for techno economic assessment on continuation of operations				
19	RAPS-1	100	0	0
NPCIL	4560	14927	18831	

Notes:
1. RAPS-2 restarted operations from 01.09.2009 after Enmasse Feeder Replacement (EMFR)
2. NAPS-2 shutdown for Enmasse Coolant Channel Replacement (EMCCR) 18.12.2007.
3. KAPS-1 shutdown for EMCCR from 01.07.2008.
4. RAPS-5 started commercial operation from 04.02.2010.
5. RAPS-6 started commercial operation from 31.03.2010

(http://www.dae.nic.in/writereaddata/rsus290410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 3689
TO BE ANSWERED ON 29/04/2010
3689 DR. E.M. SUDARSANA NATCHIAPPAN:

NUCLEAR SECURITY SUMMIT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Nuclear Security Summit Washington 2010, having the presence of 47 countries, combination of raw material owners to end users on 'Nuclear Security' has laid any road map to achieve the purpose of Summit; and;
(b) If so, in what manner India could use this Summit to show its capability in 'Nuclear Security' while pursuing the policy of 'Nuclear energy for Peace'?

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) 2010 Washington Nuclear Security Summit was a personal initiative of US President Barack Obama who in his Prague speech of April 2009 described nuclear terrorism as the most immediate and extreme threat to global security. The focus on combating nuclear terrorism is consistent with our concerns on terrorism and clandestine proliferation. Strengthening nuclear security is also consistent with India's interest in the safe and secure expansion of civil nuclear energy.
During the Summit, Prime Minister underlined our plans for developing 35000 MWe of nuclear energy by 2022 in the context of India's three-stage programme as well as newly opened opportunities for civil nuclear cooperation with the international community. India's concerns on clandestine proliferation and the danger of nuclear material and technical know-how falling into hands of non-state actors were also underlined. The Rajiv Gandhi Action Plan of 1988 remains the most comprehensive and elaborate proposal to move toward a nuclear weapon free world and we remain committed to it. The danger of nuclear terrorism makes early elimination of nuclear weapons a matter of even greater urgency. At the summit, Prime Minister announced the establishment of a Global Centre for Nuclear Energy Partnership in India. This is a logical step after the opening up of international civil nuclear cooperation.
The Summit outcome contained in a Communique and a Work Plan is aimed at fostering political commitment on nuclear security and follow up action in forums such as International Atomic Energy Agency.

(http://www.dae.nic.in/writereaddata/rsus290410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 3690
TO BE ANSWERED ON 29/04/2010
3690 SHRI NAND KUMAR SAI:

UTILISATION OF CIRUS RESEARCH REACTOR

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government has made any study for perspective and future utilization of Canada India Research Utility Sservice (CIRUS) research reactor at Bhabha Atomic Research Centre (BARC);
(b) If so, the details thereof ;and

(c) If not, the reasons therefor?

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) No, Sir.
(b) & (c) The CIRUS reactor commissioned in the year 1960 has been extensively utilised in various areas of research. As per the separation plan agreed with USA, CIRUS reactor will be kept in permanent shut-down state by December, 2010.

(http://www.dae.nic.in/writereaddata/rsus290410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 3691
TO BE ANSWERED ON 29/04/2010
3691 SHRI KALRAJ MISHRA:

RADIATION INCIDENT IN MAYAPURI

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether there was an incident of radiation leak from Cobalt 60 in Mayapuri in the NCT of Delhi;
(b) If so, the details in this regard;
(c) the extent of casualty/injury caused by the radiation leak;
(d) whether there was any violation of safety norm, if so, the details; and
(e) what effort have been made to stop the recurrent of such incident in future?

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) On the afternoon of April 7, 2010, an intimation was received by Atomic Energy Regulatory Board (AERB) office from Indraprastha Apollo Hospital, Delhi stating that one person, aged 32 years, owner of a scrap shop in Mayapuri Industrial Area, New Delhi had been admitted in the hospital on April 4, 2010. The message stated that the patient had symptoms indicative of suspected exposure of radiation. The AERB was asked advice on the matter. The AERB officers visited the scrap shop of the patient immediately with radiation detection equipment and identified the radiation source as Cobalt-60, used mainly in industry for radiography and in tele-therapy for cancer treatment. Subsequently, scientists from AERB, Bhabha Atomic Research Center (BARC), Narora Atomic Power Station (NAPS) and National Disaster Response Force (NDRF) conducted surveys of the area and identified 8 radioactive sources. These sources were placed in lead shielded flask and were sent to Narora for further examination and safe disposal. In a subsequent survey in neighbouring areas, two more radioactive sources were recovered from one nearby scrap shop. In another incident, a small Cobalt-60 radiation pencil was recovered from the owner of another scrap shop in the same market after he was admitted to hospital. All the sources were safely transported in shielded flasks to Narora. The radiation sources recovered are being examined at Narora to determine their origins.

Further survey of about 800 shops revealed that a small patch of soil was slightly contaminated with Cobalt-60. The soil up to a depth of few cm was removed to bring down the radiation field. Subsequent radiation surveys have confirmed that, the area is safe from the considerations of radiological safety.
(c) A total of 7 persons with radiation induced symptoms have so far been reported in various hospitals of Delhi, with one of them assessed to have received high dose. Doctors from hospitals are in continuous communication with the medical officers of Medical Division of BARC, Mumbai. One person died in hospital on 26.04.2010.
(d) & (e) Possession and use of all radioactive sources such as Cobalt-60 requires licence from the Atomic Energy Regulatory Board. Also, replacement of Cobalt-60 also requires consent of AERB which is granted on the basis that the used Cobalt-60 source is returned to the original supplier and the owners of the sources are under obligation to ensure safety and security of the sources.
The preliminary investigations carried out so far indicate that the sources found in Mayapuri Scrap shops are not fabricated in India. It is possible that these sources have come to India along with some imported scrap. Though there is a requirement that exporting countries have to certify that the scrap being exported does not contain any radiation material, there are instances when radioactive material has found its way to India along with the scrap.
In order to prevent such incidents following measures are being taken:
1. The Government of India had set up a National Disaster Management Authority (NDMA) in 2005. The NDMA has raised and trained four battalions of National Disaster Response Force (NDRF) for responding to radiological emergencies. Also the DAE established eighteen well-equipped Emergency Response Centres at different parts of the country for preparedness and response to any radiological emergency in the public domain.

2. A variety of Radioactive Material Detection equipment are being installed at various Border points – seaports, airports and landports. The detection capabilities have been aimed as per international guidelines and specifications (Mega Port Initiative complaint) to detect a variety of radioactive substances emitting gamma rays and neutrons. In addition, portable equipment are being procured for use by National Disaster Response Force of NDMA and by Emergency Response Teams of the DAE for radiation detection. Capacity is being created for inspection of trucks/containers passing on the road (vehicle monitors), portal monitors to inspect personnel at entry/exit and handheld detection equipment for close scrutiny including Isotope identification.

(http://www.dae.nic.in/writereaddata/rsus290410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 5326
TO BE ANSWERED ON 28/04/2010
5326 SHRI ANAND PRAKASH PARANJPE:

FAST BREEDER REACTORS

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) whether India's first Fast Breeder Reactor (FBR) for commercial nuclear energy generation is likely to be delayed;
(b) if so, the reasons for the delay; and

(c) the time by which this will be made operational?

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) Yes Sir, it is likely to be delayed by about one year.

(b) Due to tsunami in December 2004, the raft which support the civil structures got severely affected and needed to be reconstructed. Also, the Indian industries carried out a number of mock up both on civil and mechanical works so as to meet the stringent technical specifications with confidence. Many of the activities of PFBR construction are first of a kind for the industries.

(c) The commissioning is likely to start by March 2012.

(http://www.dae.nic.in/writereaddata/lsus280410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 5373
TO BE ANSWERED ON 28/04/2010
5373 SHRI PURNMASI RAM:

SETTING UP TACTIC AND MYSTIQUE TELESCOPES

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether despite an expenditure of Rs.16.18 crore on setting up of TACTIC and MYSTIQUE telescopes by the Department of Atomic Energy, they have not been able to establish them so far;
(b) if so, the reasons therefor; and
(c) the reasons for shifting it from Mount Abu to Hanle, in Ladakh?

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) No, Sir. The TACTIC telescope has been set up and upgraded at Mt. Abu. Useful data collected from galactic and extragalactic objects by the TACTIC telescopes has been published in high impact journals. The prototype MYSTIQUE comprising of an array of 30 detectors was installed during 1995-96 and operated with various configurations till 1999. Useful data on the polarization characteristics of the atmospheric Cherenkov events were collected during this period. Upgradation of MYSTIQUE was not taken up due to global developments in gamma-ray astronomy.
(c) It was envisaged to set up four telescopes (TACTIC, MYSTIQUE, BEST and MACE) at one single location. However, on a review of the programme by a National Committee of experts, it was recommended to set up the large diameter MACE (Major Atmospheric Cherenkov Experiment) telescope at Hanle in the Ladakh region of J&K. The high altitude (4200m asl) and year round clear sky conditions at Hanle are the important considerations for change in the location.

(http://www.dae.nic.in/writereaddata/lsus280410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 5382
TO BE ANSWERED ON 28/04/2010
5382 SHRI M.I. SHANAVAS:

CIVILIAN NUCLEAR AGREEMENTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has formally agreed to provide access to the International Atomic Energy Agency (IAEA) of its civilian nuclear reactors;
(b) if so, the details thereof and the reasons therefor;
(c) whether the IAEA can conduct inspection of the military facilities;
(d) if so, the reaction of the Government thereto;
(e) whether any hurdles are being faced in the implementation of civilian nuclear co-operation agreements with various countries;
(f) if so, the details thereof; and
(g) the details of the decisions arrived at during the last round of negotiations with USA on nuclear fuel reprocessing?

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) In accordance with India's Separation Plan tabled in Parliament on 11.05.2006, 10 nuclear power reactors have so far been placed under safeguards under the agreement between the Government of India and International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities signed on 2 February 2009.
(c) No Sir.

(d) Does not arise.
(e) Agreements between India and various other countries on peaceful use of nuclear energy are to be implemented as per the agreed terms and no hurdles are foreseen in their implementation.
(f) Does not arise.
(g) 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, Article 6(iii) of the agreement calls for consultations on arrangements and procedures within one year.

In March 2009 the US responded to India's request invoking Article 6 (iii) of the Indo-US Agreement on arrangements and procedures confirming that the first round of formal consultations, would commence no later than 3 August 2009 and that final agreement on arrangements and procedures is to be reached no later than 3 August 2010.The text has been finalized in the last round of negotiations held from 2-4 March 2010

(http://www.dae.nic.in/writereaddata/lsus280410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 5391
TO BE ANSWERED ON 28/04/2010
5391 SHRI BISHNU PADA RAY:

SETTING UP OF NUCLEAR POWER PLANT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether there is any proposal to set up a 250 MW Nuclear Power Plant on an island of Andaman and Nicobar Islands;
(b) if so, the details thereof including the current status of the Plant; and
(c) the time by which such plant is likely to be commissioned?

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) No, Sir.
(b) & (c) Does not arise.

(http://www.dae.nic.in/writereaddata/lsus280410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 5460
TO BE ANSWERED ON 28/04/2010
5460 SHRI JAGDISH SHARMA:
SHRIMATI SUPRIYA SULE:
SHRI KACHHADIA NARANBHAI:
SHRI M.B. RAJESH:
SHRIMATI RAMA DEVI:
SHRI PRADEEP MAJHI:

NUCLEAR POWER PROJECT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the names of the countries with which agreements have been signed for setting up of nuclear power plants in the country after the approval of international community alongwith the locations identified for these plants including their capacity to generate power; and
(b) the time by which these nuclear power plants are likely to commence the production?

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) Consequent to the clearance of the Nuclear Suppliers Group (NSG), enabling intergovernmental agreements (IGA) outlining the framework of cooperation including setting up nuclear power reactors have been signed with Russian Federation, France and the USA. Commercial agreements for setting up of reactors are presently under discussion. The government has accorded 'in principle' approval of sites for setting up reactors in cooperation with foreign countries as follows:

Country	Sites Designated	Nominal Capacity (MW)
Russian Federation	Kudankulam, Tamilnadu	4 x 1000 *
	Haripur, West Bengal	6 x 1000
France	Jaitapur, Maharashtra	6 X 1650
United States of America	Kovvada, Andhra Pradesh	6 x 1000
	Chhaya Mithi Virdi, Gujarat	6 x 1000

* Additional capacity, 2 x 1000 MW capacity is already under construction at the site.
(b) Pre-project activities are currently in progress at these sites. The planning is to start work on the first set of twin units at the above sites in 2012 subject to land acquisition. The commercial generation will start after 6 years from the first pour of concrete.
(http://www.dae.nic.in/writereaddata/lsus280410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 5484
TO BE ANSWERED ON 28/04/2010
5484 SHRI P.C. GADDIGOUDAR:
SHRIMATI JAYA PRADA:
SHRI ABDUL RAHMAN:

NUCLEAR LIABILITY BILL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government is considering to bring civil nuclear liability bill which will allow the foreign nuclear companies to set up nuclear reactors in India;
(b) if so, the details thereof;
(c) whether there is any provision for compensation to victims, if any, in case of nuclear accident;
(d) if so, the details thereof; and
(e) the time by which the proposed bill is likely to come into force?

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) The Government intends to introduce a Bill in the Lok Sabha to provide for civil liability for nuclear damage. The Atomic Energy Act, 1962 does not permit any foreign company to set up nuclear reactors in India. Nuclear power plants can only be set up either by the Central Government itself or through any authority or Corporation established by it or a Central Government Company.
(b) The proposed legislation provides for prompt compensation to the victims of a nuclear incident. The Bill facilitates payment of compensation by enforcing no-fault liability on the operator of a nuclear installation. The Bill lays down the liability of the operator at rupees five hundred crores per nuclear incident and a maximum amount of liability at rupee equivalent of three hundred million Special Drawing Rights (at present exchange rate Rs 2163 crores) for a nuclear incidence. It also empowers the Government to increase or decrease the amount of liability of the operator depending on the risk involved.
(c) & (d) The Atomic Energy Act, 1962 does not address the issue of civil nuclear liability. The Public Liability Insurance Act, 1991 (enacted in the aftermath of the tragedy caused by an accident in Bhopal in 1984) is not applicable to nuclear incidents. Thus, at present there is no law to provide compensation to the victims of a nuclear incident.

(e) The Bill will be enacted into a law after completing all required procedures. The Act will enter into force after the notification by the government.

(http://www.dae.nic.in/writereaddata/lsus280410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2911
TO BE ANSWERED ON 22/04//2010
2911 SHRI RAJ MOHINDER SINGH MAJITHA:
SHRI SHIVANAND TIWARI

NECESSITY OF CIVIL NUCLEAR LIABILITY BILL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that the passage of Civil Nuclear Liability Bill in India is necessary for working under Indo-American nuclear treaty;
(b) if so, the reaction of Government in this regard;
(c) whether the need for passage of the above bill is also for the establishment of atomic industry with other countries of the world; and
(d) if so, the facts 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 (d) The Bill aims to provide prompt compensation to victims of a nuclear incident. Enactment of a legislation which provides for nuclear liability that might arise due to a nuclear incident will also enable India to join an appropriate international liability regime. An adequate liability regime in India is also considered essential for the growth of India's nuclear sector. This would also facilitate cooperation on the basis of India's civil nuclear cooperation agreements with other countries including with the USA. To achieve this, the Civil Liability for Nuclear Damage Bill 2010 is likely to be introduced in the Lok Sabha during the current session of Parliament.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2912
TO BE ANSWERED ON 22/04//2010
2912 SHRI RAMDAS AGARWAL:

NUCLEAR DAMAGE BILL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government proposes to bring forward draft of the Civil Liabilities for Nuclear Damage Bill during the current session of Parliament; and
(b) whether before introduction of the above mentioned Bill, Government propose to talk to other opposition parties so as to remove differences over the mechanism of payment of compensation in case of accident and other deficiencies in the Bill, 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):
(a) The Civil Liability for Nuclear Damage Bill 2010 is likely to be introduced in the Lok Sabha during the current session of Parliament.
(b) Government would take all steps as considered necessary for the passage of

the proposed Bill.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2913
TO BE ANSWERED ON 22/04//2010
2913 SHRI MANOHAR JOSHI:

PROBLEMS OF INDIAN NUCLEAR INDUSTRY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that Indian Nuclear Industry has been struggling with tackling the embargoes;
(b) if so, the details thereof;
(c) whether Government is aware that most of our Research and Development efforts have been spent on import substitution due to lack of infrastructure and resources;
(d) if so the details thereof;
(e) whether it is a fact that though we can develop the required reactor technology, it would take a long time and efforts to bring it to the international level; and
(f) if so, the steps that are being taken by Government in this regard?

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) Indian nuclear industry has been able to overcome the difficulties arising out of embargoes; in fact, embargoes have accelerated the process of indigenisation, development of new technologies having no parallel elsewhere and finding technology solutions best suited to our conditions.
(c) & (d) R&D in the Department of Atomic Energy is primarily directed towards technology development required for the indigenous nuclear reactors and fuel cycle activities.
(e) Indigenously developed technologies for nuclear reactors and fuel cycle operations are of international standard. In some areas, India occupies a global leadership position.
(f) Government has been providing adequate support in the development of various aspects of nuclear technology.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2914
TO BE ANSWERED ON 22/04//2010
2914 SHRI MANGALA KISAN:

APPROACH ON NUCLEAR BILL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government proposes a go-slow approach on Nuclear Bill;
(b) to what extent the Bill would help American Nuclear Reactor Manufacturers; and
(c) to what extent the Bill would help India in strengthening its nuclear capability?

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 Civil Liability for Nuclear Damage Bill 2010 is likely to be introduced in the Lok Sabha during the current session of Parliament.
(b)&(c) The Bill aims to provide prompt compensation to victims of a nuclear incident. Enactment of a legislation which provides for nuclear liability that might arise due to a nuclear incident will also enable India to join an appropriate international liability regime. An adequate liability regime in India is also considered essential for the growth of India's nuclear sector. This would also facilitate cooperation on the basis of India's civil nuclear cooperation agreements with other countries including with the USA.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2915
TO BE ANSWERED ON 22/04//2010
JOINT VENTURE ON NUCLEAR FUEL FABRICATION
2915 SHRI PRAKASH JAVADEKAR:

AND URANIUM MINING

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that Russian PM, during his recent visit to India, had offered N-fuel fabrication and a joint venture to explore and mine uranium in Russia; and
(b) if so, the Government's response thereto?

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) - In the Roadmap for the serial construction of the Russian design Nuclear Power Plants in the Republic of India signed by the Department of Atomic Energy of the Government of India and the State Atomic Energy Corporation (ROSATOM) of the Russian Federation on 12 March 2010, both the parties confirmed their interest for joint development of uranium deposits in the Russian Federation and third countries, and for setting up a joint venture for fabrication of nuclear fuel subject to techno-commercial viability.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2916
TO BE ANSWERED ON 22/04//2010
2916 SHRI Y.P. TRIVEDI:

SHORTAGE OF URANIUM

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether only three nuclear reactors would remain operational due to shortage of Uranium in the country;
(b) the number of nuclear reactors in the country and their power generation capacities; and
(c) 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 (c) No, Sir. There are 19 reactors with a capacity of 4560 MW in operation in the country. Out of these reactors, 5 reactors of 960 MW operate with imported uranium of which there is no shortage. 14 reactors are fuelled by domestic uranium which is not available in the required quantity. These reactors are being operated at lower power levels to match the availability of domestic uranium. Details of reactors in operation are as under:

No	Unit	Rated Capacity (MW)	Current (Apr 2010) Operating capacity
Reactors fuelled by Imported Uranium			
1	TAPS-1	160	160
2	TAPS-2	160	160
3	RAPS-2	200	200
4	RAPS-5	220	200
5	RAPS-6	220	110
Total		960	830
RAPP – 5 & 6 being new units are authorized to operate at 90% & 50% Full power			
Reactors fuelled by domestic Uranium (operated at maximum 70% of full power)			
6	TAPS-3	540	370

7	TAPS-4	540	370
8	RAPS-3	220	150
9	RAPS-4	220	150
10	MAPS-1	220	130
11	MAPS-2	220	110
12	NAPS-1	220	130
13	KAPS-2	220	130
14	KAIGA-1	220	120
15	KAIGA-2	220	130
16	KAIGA-3	220	150
Total		3060	1940
Reactors fuelled by domestic Uranium but under Renovation & Modernization.			
17		NAPS-2	220
18		KAPS-1	220
Total		440	
Shut down for techno economic assessment on continuation of operations			
19		RAPS-1	100
Total Capacity		4560	2770

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2917
TO BE ANSWERED ON 22/04//2010
2917 SHRI NANDKUMAR SAI:

MISSING PICTURE OF '69 MOON MISSION'

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the picture of '69 Moon Mission' are missing from the research lab;
(b) if so, the whether the Tata Institute of Fundamental Research has constituted a committee for investigation in this regard;

(c) if so whether the said committee has completed their investigation;

(d) if so, the details thereof and the outcome therefor;

(e) the acion taken/proposed to be taken against the persons found guilty in this regard; and

(f) if not, the time by which the investigations would be completed?

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 Tata Institute of Fundamental Research (TIFR) was presented with a framed, autographed photograph of the Apollo 15 mission in 1985 by US Astronaut, James Irwin. As per archival records of TIFR, no photograph of 1969 moon mission was presented to TIFR;
(b), (c) & (d) In June 2009 there was a news report in the Times of India about an autographed photograph of moon mission presented to TIFR having gone missing from TIFR Lab. TIFR constituted a Committee to investigate in to the news paper reports. The Committee conducted an extensive search through the records at the Institute and found that there was only a photograph of the Apollo 15 mission autographed by US Astronaut James Irwin, which was presented to TIFR in 1985. This photograph is still in the Institute in its archive.
(e) & (f) Since no photograph has gone missing, the question of action being taken against persons found guilty, does not arise.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2918
TO BE ANSWERED ON 22/04//2010
2918 SHRI NAND KUMAR SAI:

MOUS SIGNED BY NPCIL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Nuclear Power Corporation of India Limited has signed Memorandum of Understandings with companies from Russian Federation, France and the USA for setting up of Nuclear power plants in the country;
(b) if so, the details in this regard;
(c) the status of each of such MoUs as on date; and
(d) the time by which these nuclear power plants would start their production?

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 (d) Discussions have been held with Atomstroyexport (ASE) of Russian Federation in terms of the intergovernmental agreement to arrive at a techno commercial offer to set up additional reactors at Kudankulam, Tamilnadu. NPCIL have signed MoU with AREVA of France to set up reactors at Jaitapur, Maharashtra and separation of work between AREVA & NPCIL has been agreed. Other details are being worked out. While NPCIL has signed MoUs with GE Hitachi Nuclear Energy (GEH) and Westinghouse Electric Company (WEC) of the USA, establishment of legislative framework in India and the USA is awaited to proceed further. The planning is to start work on light water reactors based on international co-operation with Russia, France and the USA in the year 2012. The completion period for first set of reactors is about 6 years from the start of construction.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2919
TO BE ANSWERED ON 22/04//2010
2919 SHRI BHARATKUMAR RAUT:

MISSING OF NUCLEAR SCIENTIST

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that a nuclear scientist is missing from second week of February 2010 who was working in the Indira Gandhi Centre for Atomic Research in Kalpakkam of Tamil Nadu State;
(b) whether it is a fact that a scientist employed at Kaiga Atomic Power Station in Karnataka had also gone missing in June, 2009 and was later found dead;
(c) whether it is a suspected threat to our security that the nuclear scientists are being reported missing in suspicious manner; and
(d) the steps Government proposes to take to prevent such cases in the country?

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) Shri S.Ananthanarayanan, Scientific Officer/E of Indira Gandhi Centre for Atomic Research was initially reported missing and later found dead as a result of being run over by a train near Guduvancherry Railway Station in Chennai on 15th February, 2010.
b) Yes, Sir.
c) No, Sir.
d) In view of (c) above, does not arise.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2920
TO BE ANSWERED ON 22/04//2010
2920 SHRI B. S. GNANADESIKAN:

UNDERGROUND NEUTRINO OBSERVATORY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government proposed to set up underground neutrino observatory through Department of Atomic Energy in the mountains of Western Ghats of Tamil Nadu;
(b) if so, the details thereof and whether Government has analyzed about the possibilities of radiation in the dense forest areas; and
(c) if so, the details thereof and steps taken by Government in this regard?

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) Yes, Sir. The India based Neutrino Observatory (INO) is proposed to be set up through the Department of Atomic Energy and Department of Science & Technology. Presently a site in Bodi West Hills near T.Pudukottai village of Theni District, Tamilnadu has been identified as a suitable location.
(b)&(c)The project includes construction of a world class underground laboratory under a rock cover of at least 1200 m from all directions. This underground laboratory will be accessed by 7.5 meter wide tunnel of approximately 2 km in length. The primary goal of INO is to study neutrino properties. Determination of neutrino properties is one of the most significant open problems in Physics today. Such studies will help us in understanding the interactions among subatomic particles at a very small scale. In this underground laboratory a massive 50 kton particle detector will be installed to study the cosmic ray produced neutrinos. The project will put India back on the world-map of underground science, a position that was held by India during the 2nd half of the 20th century.
There is no radiation involved in this experiment. Neutrinos have been around us from the beginning of the universe. In fact the experiment is required to be carried out underground only to avoid the cosmic ray particles. This is a very passive detector where the neutrinos already existing in nature will be detected. Scientists involved in this project are clarifying this to the local population by organizing interaction meetings with the local people as well as through public outreach

programmes. A meeting was also organized by the District Collector of Theni District, Tamilnadu in his office on 25th January 2010, where the INO scientists explained the salient features of this project to the local MLA, Panchayat Presidents, representatives of farmers etc.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO : 381
TO BE ANSWERED ON 22/04//2010
381 SMT. KUSUM RAI:

NUCLEAR LIABILITY BILL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government is considering to bring the Nuclear Liability Bill which would allow the foreign nuclear companies to set up nuclear reactors in India;
(b) if so, the details thereof;
(c) whether there is any provision for compensation to victims if any, incase of nuclear accident;
(d) if so, the details thereof; and
(e) by when the proposed Bill is likely to come into force?

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) to (e) A statement is laid on the Table of the House.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.381 FOR ANSWER ON 22.04.2010 BY SMT. KUSUM RAI REGARDING NUCLEAR LIABILITY BILL.

(a) The Government intends to introduce a Bill in the Lok Sabha to provide for civil liability for nuclear damage. The Atomic Energy Act, 1962 does not permit any foreign company to set up nuclear reactors in India. Nuclear [power plants can only be set up either by the Central Government itself or through any authority or Corporation established by it or a Central Government Company.

(b) The proposed legislation provides for prompt compensation to the victims of a nuclear incident. The Bill facilitates payment of compensation by enforcing no-fault liability on the operator of a nuclear installation. The Bill lays down the liability of the operator at rupees five hundred crores per nuclear incident and a maximum amount of liability at rupee equivalent of three hundred million Special Drawing Rights(at present exchange rate Rs. 2163 crores) for a nuclear incidence. It also empowers the Government to increase or decrease the amount of liability of the operator depending on the risk involved.

(c) & (d)The Atomic Energy Act, 1962 does not address the issue of civil nuclear liability. The Public Liability Insurance Act, 1991 (enacted in the aftermath of the tragedy caused by an accident in Bhopal in 1984) is not applicable to nuclear incidents. Thus at present there is no law to provide compensation to the victims of a nuclear incident.

(e) The Bill will be enacted in to a law after completing all required procedures. The Act will enter in to force after its notification by the Government.

(http://www.dae.nic.in/writereaddata/rsus220410.pdf#page=13)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.381 FOR ANSWER ON 22.04.2010 BY SMT. KUSUM RAI REGARDING NUCLEAR LIABILITY BILL.

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(c) & (d)The Atomic Energy Act, 1962 does not address the issue of civil nuclear liability. The Public Liability Insurance Act, 1991 (enacted in the aftermath of the tragedy caused by an accident in Bhopal in 1984) is not applicable to nuclear incidents. Thus at present there is no law to provide compensation to the victims of a nuclear incident.

(e) The Bill will be enacted in to a law after completing all required procedures. The Act will enter in to force after its notification by the Government.

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 4171
TO BE ANSWERED ON 21/04/2010
4171 SHRI ARJUN MUNDA:

IMPORT OF URANIUM

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the uranium used in the nuclear reactors for production of nuclear energy has reached India after the signing of Indo-US civil nuclear deal;
(b) if so, the details thereof;
(c) the extent to which the present power crisis can be solved with the import of uranium from various countries; and
(d) the States which are likely to be benefited therefrom?

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) Yes, Sir. Following the decision of Nuclear Supplier's Group in September, 2008 and finalization of Agreements with friendly countries including the USA, contracts have been signed with France, Russia and Kazakhstan for supply of uranium. While France has completed the supply, part supplies have been received from Russia.
(c) Imported fuel can be used only in reactors under International Atomic Energy Agency (IAEA) safeguards. At present only 7 operating reactors are under IAEA safeguards. Capacity utilization has improved after introduction of imported uranium in safeguarded reactors.
(d) The State of Maharashtra, Gujarat, Rajasthan, Delhi, Uttar Pradesh, Haryana, Punjab, Himachal Pradesh, Uttarakhand, Jammu & Kashmir and Chandigarh are likely to be benefited from the above import of Uranium.
(http://www.dae.nic.in/writereaddata/lsus210410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 4184
TO BE ANSWERED ON 21/04/2010
4184 SHRI KACHHADIA NARANBHAI:

ATOMIC POWER GENERATION POTENTIAL IN GUJARAT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the atomic power generation potential exploited in Saurashtra Kutch Region (SKR) of Gujarat; and
(b) the total atomic power generated in Gujarat out of the power generated from other source at present in the State?

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) The Site Selection Committee of the Government had requested Gujarat government to offer suitable sites for locating nuclear power plants. The Gujarat government offered six sites, including three in the Saurashtra region. The sites were evaluated in detail and a site at Chhaya Mithi Virdi in Bhavnagar district of the Saurashtra region was found to be suitable. The Government has accorded 'in principle' approval for the site in October 2009, for locating six reactors, each of 1000 MWe or higher capacity. Pre-project activities are currently on hand with a plan to commence work on the first set of twin units at the site in the year 2012.
(b) The installed capacity in Gujarat (as on 31.03.2010) including allocation from central sector generating stations in the Western electricity region is 13908 MW. The share of nuclear power in Gujarat from TAPS 1 to 4 and KAPS 1&2 is 559 MW, constituting about 4%.

(http://www.dae.nic.in/writereaddata/lsus210410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 4209
TO BE ANSWERED ON 21/04/2010
4209 SHRIMATI HARSIMRAT KAUR BADAL:
SHRIMATI YASHODHARA RAJE SCINDIA:
SHRI MOHINDER SINGH KAYPEE:
SHRI BADRUDDIN AJMAL:
SHRI KALIKESH N. SINGH DEO:
SHRI RAVNEET SINGH:

NUCLEAR POWER PLANTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has received several proposals from the State Governments during the last six months for setting up of new nuclear power plants in their States;
(b) if so, the details thereof; State-wise;
(c) the decision taken by the Union Government on these proposals;
(d) the locations identified in these States alongwith cost of the projects; and
(e) the time by which these plants will become operational alongwith their capacity?

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) Consequent to the in principle approval of sites in Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Tamilnadu and West Bengal in October 2009. Governments of Rajasthan, Karnataka and Bihar have reiterated their requests for setting up new nuclear power plants in future. The sites under consideration are Mahi-Banswara (Rajasthan), Kaiga & Mannur (Karnataka) and Rajauli (Bihar).
(c) to (e) The evaluation of sites by the Standing Site Selection Committee (SSSC) of the Government is an on going activity. The 'in principle' approval of the sites by the Government is the first step in the process of setting up nuclear power plants. The details of the projects are finalized subsequently.

(http://www.dae.nic.in/writereaddata/lsus210410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 4213
TO BE ANSWERED ON 21/04/2010
4213 SHRI GANESH SINGH:

TARAPORE ATOMIC POWER PLANT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Tarapore Atomic Power Plant is operating well below capacity due to shortage of uranium and consequently Madhya Pradesh is getting only half power supply in comparison to its allotted quota;
(b) if so, the details thereof alongwith the reasons therefor;
(c) whether the Government proposes to increase supply of uranium to this plant; 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):
(a) & (b) Tarapur Atomic Power Station located in Maharashtra has four reactors units 1 to 4 in operation. Units 1&2 (2x160 MW) use imported enriched uranium and are operating at full power. The power from these units is allocated to the states of Maharashtra & Gujarat. Units 3&4 (2x540 MW) use domestic natural uranium. Madhya Pradesh has a share of 20% from TAPS 3&4. These reactors are currently operating at about 70% of their rated power capacity due to non availability of domestic uranium in the required quantity. Consequently, Madhya Pradesh and other beneficiary states are getting a proportionately lower power supply.
(c) Yes, Sir.
(d) The government is making efforts to augment domestic uranium supply for nuclear power plants including TAPS 3&4 fuelled by domestic uranium by expanding existing mines and opening of new mines and processing mills.

(http://www.dae.nic.in/writereaddata/lsus210410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 4241
TO BE ANSWERED ON 21/04/2010
4241 SHRI RAM SUNDAR DAS:
SHRI BHISMA SHANKER ALIAS KUSHAL TIWARI:

LIFE OF NUCLEAR POWER STATIONS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the names of nuclear power stations whose life span is going to expire;
(b) the steps taken to prevent the threats of radioactivity caused by these power stations;
(c) the names of nuclear power stations where incidents of radioactivity leakage have occurred during the last three years and till date;
(d) whether the Government has conducted or proposes to conduct any study to assess the impact of radioactivity on the families residing near these stations?
(e) If so, the details of the study thereof; and
(f) the action taken or proposed to be taken by the Government in this regard?

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) Nil. Internationally, the economic life of nuclear power stations is 30-40 years. Based on systematic life assessment studies and life extension measures, the nuclear power plants can be safely operated for another 20-25 years. In India also our experience has been similar. Operation of all plants is subject to licensing by the Atomic Energy Regulatory Board (AERB) and review of operation from time to time.
(b) Not applicable.
(c) During the last three years, there has been no Incident of leakage or discharge of radioactivity beyond the limits specified by the AERB.

(d) Epidemiological surveys to assess the effects of radiation among the employees and their family members who reside near the nuclear power plants have been completed by the Tata Memorial Centre, a premier research institute in India.
(e) The above surveys have indicated that the operations of nuclear power plants have no ill effects on health.
(f) Not applicable in view of (e) above.

(http://www.dae.nic.in/writereaddata/lsus210410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 4280
TO BE ANSWERED ON 21/04/2010
4280 SHRI R. THAMARAISELVAN:

UNDERGROUND NEUTRINO OBSERVATORY LABORATORY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government is considering to set up an underground Neutrino Observatory Project in Tamil Nadu;
(b) if so, the details thereof;;
(c) whether the Government has taken any steps to allay the radiation bears among local people and environmentalists; 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):
(a) Yes, Sir. The India based Neutrino Observatory (INO) is proposed to be set up through the Department of Atomic Energy and Department of Science & Technology. Presently a site in Bodi West Hills near T.Pudukottai village of Theni District, Tamilnadu has been identified as a suitable location.
(b) The project includes construction of a world class underground laboratory under a rock cover of at least 1200 m from all directions. This underground laboratory will be accessed by 7.5 meter wide tunnel of approximately 2 km in length. The primary goal of INO is to study neutrino properties. Determination of neutrino properties is one of the most significant open problems in Physics today. Such studies will help us in understanding the interactions among subatomic particles at a very small scale. In this underground laboratory a massive 50 kton particle detector will be installed to study the cosmic ray produced neutrinos. The project will put India back on the world-map of underground science, a position that was held by India during the 2nd half of the 20th century.
(c)& (d) There is no radiation involved in this experiment. Neutrinos have been around us from the beginning of the universe. In fact the experiment is required to be carried out underground only to avoid the cosmic ray particles. This is a very passive detector where the neutrinos already existing in nature will be detected. Scientists involved in this project are clarifying this to the local population by organizing interaction meetings with the local people as well as through public outreach programmes. A meeting was also organized by the District Collector of Theni District, Tamilnadu in his office on 25th January 2010, where the INO scientists explained the salient features of this project to the local MLA, Panchayat Presidents, representatives of farmers etc.

(http://www.dae.nic.in/writereaddata/lsus210410.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO : 291
TO BE ANSWERED ON 15/04//2010
***291 SHRI BHAGAT SINGH KOSHYARI:**

CAPACITY ADDITION PLANS OF ATOMIC PLANTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the details of the capacity addition plans of various atomic power plants of India;
(b) whether Government is planning to set up new atomic power plants;
(c) if so, the details thereof;
(d) if so whether Government has considered atomic power plants in the State of Uttarkhand; and
(e) if not, the reasons therefor?

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) to (e) A statement is laid on the Table of the House.
Government of India
Department of Atomic Energy
STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.292 BY SHRI BHAGAT SINGH KOSHYARI REGARDING CAPACITY ADITION PLANS OF ATOMIC PLANTS
(a) Currently, a capacity of 4560 MW is in operation and 5520 MW under construction at eight atomic power plant sites in the country. A capacity addition of 4000 MW from four reactors of 1000 MW each in two phases of 2X1000 MW is planned at Kudankulam, Tamilnadu where a capacity of 2X1000 MW is presently at an advanced stage of construction.

(b) Yes, Sir.

(c) The Government has 'in principle' approved sites for a nominal capacity of 32100 MW at six new locations in Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra and West Bengal. Pre-project activities are currently in progress and start of work on the first phase (a capacity of about 12000 MW out of total of 32100 MW) at these sites in the year 2012 is planned.

(d) Yes, Sir. However, no suitable site amongst the sites offered by the state government could be identified in view of the seismic environment and presence of faults in the region.

(e) Not Applicable.

(http://www.dae.nic.in/writereaddata/rssq150410_291.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2136
TO BE ANSWERED ON 15/04//2010
2136 SHRI KALRAJ MISHRA:

INSTALLATION OF NUCLEAR POWER REACTORS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government has decided to install more Nuclear Power Reactors at existing nuclear power plants and opening and setting up additional power plants;
(b) if so, the details of the Nuclear Power Expansion Plan and its cost; and
(c) the steps taken and being taken in implementation 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):
(a)&(c) There are 19 nuclear power reactors (4560 MW) in operation and 8 nuclear power reactors (5520 MW) under construction. Setting up additional 4 reactors of 2x1000 MW in two phases at Kudankulam, where two reactors are under construction and setting up reactors at new sites is planned. The total nuclear power capacity will increase to 7280 MW by the year 2012 and to 10080 MW by the year 2017 on completion of projects under construction. A capacity of about 12,800 MW is proposed to be taken up for construction in future in the first instance. The expected cost is Rs.10 to 12 crore / MW. As a part of implementation of this plan, the sites have been approved in principle by the Government and pre project activities at new sites have commenced.

(http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2137
TO BE ANSWERED ON 15/04//2010
2137 SHRI PARVEZ HASHMI:

PROVISION OF ATOMIC POWER STATIONS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the name of the States where the proposed Atomic Power Stations are to be provided;
(b) the numbers of such Atomic Power Stations that are proposed,
(c) the power generation capacity of these Atomic Power Stations; and
(d) by when the work of first phase would be completed?

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) to (d) In addition to 19 nuclear power reactors (4560 MW) in operation and 8 nuclear power reactors (5520 MW) under construction, the details of the sites in principle approved by the Government for future power reactors are:

(b)

State	Number of reactors	Power Capacity
Andhra Pradesh	6	2000 MW in 3 phases each
Gujarat	6	2000 MW in 3 phases each
Haryana	4	1400 MW in 2 phases each
Madhya Pradesh	2	1400 MW in 1 phase
Maharashtra	6	3300 MW in 3 phases each
Tamilnadu	4	2000 MW in 2 phases each
West Bengal	6	2000 MW in 3 phases each

The planning is to start work of the first phase at above sites in the year 2012 and the completion period is about 6 years.

(http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2138
TO BE ANSWERED ON 15/04//2010
2138 SHRI PARIMAL NATHWANI:

URANIUM MINES AT JADUGUDA

(a) to (d) In addition to 19 nuclear power reactors (4560 MW) in operation and 8 nuclear power reactors (5520 MW) under construction, the details of the sites in principle approved by the Government for future power reactors are: WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) In what manner Government is planning to exploit the substantial reserves of Uranium at Jaduguda mines in Jharkhand State;
(b) whether Government has planned to set up nuclear power plant in Jharkhand State which would help in meeting the power shortage in the State;
(c) whether Jharkhand State is eligible to get 10 percent power free of cost from pit head power plants located in Jharkhand State; and
(d) if not, whether Government is planning to frame a policy to give 10 percent of power generated at pit head power plants in Jharkhand free of cost similar to the policy for hydro power stations?

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) Uranium Corporation of India Limited(UCIL) has taken over all the economically viable uranium deposits identified by the Atomic Minerals Directorate for Exploration & Research(AMD) in the State of Jharkhand for mining. The mining activities are being carried out as per the rules and regulations governing the same.

(b) At present there is no proposal to set up a Nuclear Power Plant in Jharkhand State.

(c) &(d) Does not arise in view of (b) above.

(http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2139
TO BE ANSWERED ON 15/04//2010
2139 SHRI P. RAJEEVE:

LIABILITY IN CASE OF ACCIDENTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether India is a signatory to any International Agreements which has got an obligation to limit the liability of the reactor companies in case of accidents;
(b) if so, the details thereof; and
(c) whether there is any specific condition to limit the liabilities of the reactor companies in case of accidents under the existing contractual arrangements made by India with other countries?

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) to (c) The following bilateral agreements which have entered into force have provisions related to liability for nuclear damage:
1) Article -13.1 of the Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the Construction of Additional Nuclear Power Plant Units at Kudankulam site as well as in the Construction of Russian designed Nuclear Power Plants at New Sites in the Republic of India signed on 05 December 2008 states that the Indian Side and its authorized organization at any time and at all stages of the construction and operation of the NPP power units to be constructed under the present Agreement shall be the Operator of power units of the NPP at Kudankulam Site and be fully responsible for any damage both within and outside the territory of the Republic of India caused to any person and property as a result of a nuclear incident occurring at NPP and also in relation with a nuclear incident during the transportation, handling or storage outside the NPPs of nuclear fuel and any contaminated materials or any part of NPP equipment both within and outside the territory of the Republic of India.

2) Article VIII (2) of the Cooperation Agreement between the Government of the Republic of India and the Government of the French Republic on the Development of Peaceful Uses of Nuclear Energy signed on 30 September 2008 states that the Parties agree that, for the purpose of compensating for damage caused by a nuclear incident involving material, nuclear material, equipment,

facilities and technology referred to in Article IX, each party shall create a civil nuclear liability regime based upon established international principles.

http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2140
TO BE ANSWERED ON 15/04//2010
2140 SHRI RAMA CHANDRA KHUNTIA:

ACHIEVEMENT OF TARGETTED NUCLEAR POWER

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the target of getting nuclear power in the Tenth Plan and Eleventh Plan;
(b) whether we have been able to achieve the target of getting power from Atomic Energy;
(c) if not, the reason therefore;
(d) the strategies we intent to adopt for achieving the target of getting nuclear power within the plan period?
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) The targets set for nuclear power are:
b)

Target	X Plan	XI Plan	
		Original	Mid Term Appraisal (MTA)
Capacity Addition(MW)	1300	3160	3160
Generation (Million Units)	82,495	1,63,395	1,24,608

(b) The generation in the X Plan (90354 Million units) exceeded the target (82495 Million units). With respect to capacity addition in the X Plan there was a shortfall of 220 MW which was achieved on May 6, 2007, that is a very small delay of about 5 weeks.
The achievements of X & XI Plan (first three years) have been:
Achievement X Plan XI Plan (first three years)
Capacity Addition(MW) 1080 440
Generation (Million Units) 90,354 50,714
(c) The shortfall in generation in XI Plan has been on account of non availability of fuel from domestic sources in the required quantities.

(d) Efforts are going on to complete the projects under construction leading to achievement of capacity addition target of XI Plan. In connection with the generation in the XI Plan, enhancing supply of fuel from domestic sources and use

of imported fuel for reactors under safeguards are being considered with a view to keep the shortfall to a minimum.

(http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2141
TO BE ANSWERED ON 15/04//2010
2141 SHRI MOHD. ALI KHAN:

NUCLEAR JOINT VENTURE WITH RUSSIA

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether India and Russia are considering the setting up of a joint venture to produce nuclear fuel in India;
(b) if so, the complete details worked out so far and the purpose behind it, and
(c) the implementation status 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):
(a) to (c) In the Roadmap for the serial construction of the Russian design Nuclear Power Plants in the Republic of India signed by the Department of Atomic Energy of the Government of India and the State Atomic Energy Corporation (ROSATOM) of the Russian Federation on 12.03.2010, both the parties confirmed their interest for joint development of uranium deposits in the Russian Federation and third countries, and for setting up a joint venture for fabrication of nuclear fuel subject to techno-commercial viability.

(http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 2142
TO BE ANSWERED ON 15/04//2010
2142 SHRI RAHUL BAJAJ:
SHRI RAJKUMAR DHOOT;

COMPENSATION FOR ACCIDENTS IN NUCLEAR POWER PLANTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
the limits for producer/operator liability and compensation in case of accidents in Nuclear Power Plants in the United States as compared to limits proposed in our Nuclear Liability Bill?

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):
As per information available on US laws and regulations in the public domain, the liability of individual operator is 300 million US $, whereas the limit prescribed in the proposed Civil Liability for Nuclear Damage Bill, 2010 is Rs.500 crore which can be either decreased subject to a minimum of Rs.100 crore or increased by the Government through a notification.

(http://www.dae.nic.in/writereaddata/rsus150410.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1516
TO BE ANSWERED ON 11/03/2010
1516 SHRI SHREE GOPAL VYAS:
SHRI RAGHUNANDAN SHARMA:

USE OF THORIUM FOR NUCLEAR POWER PRODUCTION

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the status of use of thorium in obtaining of atomic energy;
(b) the target fixed in Eleventh Five Year Plan with regard thereto; and
(c) if so, the details thereof?

ANSWER

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

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(a) Department of Atomic Energy (DAE) has set up a research reactor KAMINI at Kalpakkam using Uranium-233 fuel obtained from irradiated Thorium which is operating since 1996. DAE has developed the design for a 300 MWe Advanced Heavy Water Reactor (AHWR) to generate most of its power from Thorium based fuel, as a demonstrator for Thorium related technologies.
(b) & (c) During XI Five Year Plan, a range of activities pertaining to systems and technologies relevant for Thorium utilisation have been taken up. The design and development of main nuclear systems of AHWR have been completed. Large scale engineering experiments for the simulation of important thermal hydraulic parameters of its natural circulation driven cooling system have led to a better understanding of various associated phenomena.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1517
TO BE ANSWERED ON 11/03/2010
1517 SHRI B.K. HARIPRASAD:

SHORTAGE OF URANIUM FOR NUCLEAR REACTORS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether only three out of India's seventeen nuclear reactors are working to their full capacity due to critical shortage of indigenously produced uranium;
(b) whether the three working reactors source their supplies of uranium from abroad especially France;
(c) whether India has set a target of production of nuclear energy at 20,000 mw by 2020; and
(d) if so, the contingency measures on the anvil to solve the shortage of indigenously produced uranium?

ANSWER

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

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(a) & (b) There are 18 nuclear power reactors in operation in the country. Out of these, 4 reactors use imported fuel and operate at full capacity. Fuel has been imported from France and Russia for these reactors. Other reactors operate at maximum of 70% of their capacity due to shortage of indigenously produced uranium.
(c) Reaching a total nuclear power capacity of 20,000 MW by 2020 is possible.
(d) The capacity of about 20,000 MW will be fueled through a mix of indigenous and imported uranium. While long term fuel supply agreements would be entered into for reactors to be set up based on international co-operation, efforts are being made to augment domestic fuel supply by opening of new mines and augmenting ore processing facilities.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1518
TO BE ANSWERED ON 11/03/2010
1518 SHRI RAVI SHANKAR PRASAD:
SHRI SHIVANAND TIWARI:

COMPENSATION IN CASE OF ACCIDENTS IN NUCLEAR PLANTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that it has been accepted in principle that in the event of accidents in atomic energy projects set up by foreign companies in the country, the compensation would be awarded by Government of India;
(b) if so, the facts thereof; and
(c) the steps Government has taken in this direction, so far?

ANSWER

THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
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(a) to (c) The Civil Liability for Nuclear Damage Bill, 2010 is likely to be introduced in the current session of Parliament.
Such a legislation is important in order to safeguard interest of people of the country in the unlikely event of a nuclear incident and to promote the growth of nuclear industry in the country.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1519
TO BE ANSWERED ON 11/03/2010
1519 SHRI SHIVANAND TIWARI:
SHRI RAVI SHANKAR PRASAD:

DECLINE IN NUCLEAR POWER GENERATION

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that atomic energy generation plants in the country have been able to generate less power than their installed generation capacity during the past months of 2009-10;
(b) if so, their generation capacity, plant and actual power generation by these project during the said period;
(c) whether this decline in production can be attributed to low availability of fuel; and
(d) if so, the facts thereof and the reasons for low availability of fuel?

ANSWER

THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
===
(a) Yes, Sir.
(b) The current generation capacity is 4340 MW and the actual generation in 2009-10 upto February 2010 has been 16810 Million Units giving a capacity factor of about 60%.
(c) Yes, Sir. Decline in nuclear power production can partly be attributed to the low availability of indigenous uranium as fuel.
(d) Out of the capacity of 4340 MW, a capacity of 740 MW uses imported fuel and operates at full capacity. The remaining capacity uses indigenous fuel, of which there is a shortage. Increase of demand of uranium because of new capacity addition and longer time needed for opening of new uranium mines, ore processing mills and mis-match between the requirement and the indigenous production of uranium have caused the shortage. The situation is progressively improving.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1520
TO BE ANSWERED ON 11/03/2010
1520 SHRI N.R. GOVINDARAJAR:
SHRI A. ELAVARASAN:

PRIVATE SECTOR IN NUCLEAR POWER SECTOR

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government is considering to permit private sector in nuclear power sector and decided to provide all necessary resources for the nuclear power programme to increase the present nuclear capacity 4000 mw; and
(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
(a) & (b) The Atomic Energy Act. 1962 allows the Central Government to produce, develop, use and dispose of atomic energy wither by itself or through any authority or corporation established by it or a Government Company. As of today Nuclear Power Corporation of India Limited (NPCIL) & Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) are two Public Sector Undertakings authorized for this purpose. Private Sector can participate in setting up of nuclear power plants as a junior equity partner.
Private sector in India is in a position to participate in setting up nuclear power plants through supply of components, equipment and works contracts.
For the present participation of Indian private sector in nuclear power generation projects will continue to be as per the existing provisions of the Atomic Energy Act, 1962.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1521
TO BE ANSWERED ON 11/03/2010
1521 SHRI SYED AZEEZ PASHA:

INSTALLATION OF ATOMIC PLANTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether there are any plans to expand atomic energy plants in the country through installation of more power generation capacity;
(b) the fresh steps which are being taken to increase generation of atomic energy in the short term;
(c) the targeted increase in the year 2011;

(d) the funding requirement therefor; and

(e) the details thereof?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
==========
(a) Yes, Sir.
(b) & (c) The current nuclear power capacity of 4340 MW will be increased to 7280 MW progressively by the March 2012 by the completion of projects under construction. Additional capacity of 2800 MW has been approved in the year 2009. More projects are also planned to be built during the 13th Plan.
(d) & (e) The projects under construction are at an advanced stage of completion and the requirement of funds for these projects in the next two years (2010-11 and 2011-12) is estimated to be Rs.3619 crore. This will be met though a combination of internal resources, market borrowings and budgetary support.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1522
TO BE ANSWERED ON 11/03/2010
1522 DR. RAM PRAKASH:

ATOMIC PLANT IN HARYANA

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether there is any proposal under consideration of Government to build an atomic energy generation plant in Haryana;
(b) if so, the details thereof; and
(c) the total cost of the project?

ANSWER

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

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(a) to (c) The Government has accorded 'in principle' approval for setting up 4 x 700 MW Pressurised Heavy Water Reactors (PHWRs) at Kumharia in Fatehabad district of Haryana. Pre-project activities including land acquisition have been initiated. The detailed project report including cost estimates is yet to be finalized.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1523
TO BE ANSWERED ON 11/03/2010
1523 SHRI NATUJI HALAJI THAKOR:

NUCLEAR PLANT IN SURAT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that Government has decided to set up 2,000 MW of nuclear power plant in Surat with Central assistance to the meet the demands of the country;
(b) if so; whether it is also a fact that GSGENCO and National Power Corporation of India Limited (NPCIL) are going to sign the agreement very soon; and
(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
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(a) & (b) No, Sir.
(c) Not applicable.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 1525
TO BE ANSWERED ON 11.03.2010
1525 SMT. MAYA SINGH:

SECURITY OF NUCLEAR INSTALLATIONS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the lack of coordination among security agencies and local police deployed for the security of nuclear complexes in the country has ever come forward;

(b) whether any type of accident has ever happened in nuclear plants of the country;

(c) whether Government feels the need of some improvements in the security of nuclear bases keeping in view the current terrorist accidents; and

(d) if so, the measures being taken by the Government?

ANSWER

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

(a) Co-ordination amongst security agencies deployed for security of nuclear sites and the local police is well maintained for effective security.

(b) India has to its credit 315 reactor years of safe operation. There were two minor incidents: (1) a fire at Narora Atomic Power Plant and (2) collapse of concrete shell from the dome of Kaiga Power Project during its construction, both of which were classified Level – 1 (Lowest : classified as Anomaly) in the "International Nuclear Radiological Event Scale (INES) of IAEA".

(c) Security measures at Atomic Energy Establishments are regularly reviewed based on various inputs received from Central and State Agencies from time to time in order to effect improvements in integrated security systems.

(d) Adequate security arrangements exist and are updated periodically to protect Atomic Energy Establishments in the country.

(http://www.dae.nic.in/writereaddata/rsus110310.pdf#page=2)

LOK SABHA

UNSTARRED QUESTION NO.2160
TO BE ANSWERED ON 10.03.2010

DR. THOKCHOM MEINYA:

Q.2160 AGREEMENT REGARDING NUCLEAR TECHNOLOGY

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) the number of agreements signed so far with other countries regarding Nuclear Fuel Supply and Nuclear Technology Transfer alongwith the details thereof;
(b) whether the agreement with Russia is better than that of the Indo-US civil nuclear agreement; and
(c) if so, the reasons therefor?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) Since the NSG decision of September 2008 regarding civil nuclear cooperation with India, Government has signed civil nuclear cooperation agreements/arrangements with France, US, Russia, Namibia, Mongolia and UK. These agreements/arrangements cover bilateral cooperation in various areas of peaceful uses of nuclear energy, including supply of fuel and technology.

(b) & (c) No. Both agreements have their own unique merits. The agreement signed with Russia in December 2008 pertains specifically to Cooperation in the Construction of Additional Nuclear Power Plant Units at Kudankulam as well as at Other Sites. The Agreement for Cooperation Concerning Peaceful Uses of Nuclear Energy signed with the US in October 2008 is a broader framework for civil nuclear cooperation between the two countries. An Inter-Governmental Agreement (IGA) for broad-based Cooperation in the Use of Atomic Energy for Peaceful Purposes has been initialed with Russia in December 2009.
(http://meaindia.nic.in/mystart.php?id=100515999)

LOK SABHA

UNSTARRED QUESTION NO.2097
TO BE ANSWERED ON 10.03.2010

SHRI SUDARSHAN BHAGAT:

Q.2097 INDO-US NUCLEAR TREATY

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether USA has demanded nuclear non-proliferation assurance from India or imposed any conditions for implementing Indo-US Nuclear Treaty;
(b) if so, the details thereof and the reasons therefor;
(c) whether it will have any adverse impact on the nuclear trade with USA in case the said demand is not fulfilled; and
(d) if so, the details thereof and the steps taken by the Government in this regard?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) No.

(b) to (d) Does not arise. Both India and the U.S. are committed to early implementation of the India-U.S. Civil Nuclear Agreement.
(http://meaindia.nic.in/mystart.php?id=100515995)

LOK SABHA
UNSTARRED QUESTION NO.2096
TO BE ANSWERED ON 10.03.2010

SHRI M.I. SHANAVAS:

Q.2096 CIVIL NUCLEAR AGREEMENT WITH AUSTRALIA

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the Government has entered into a civil nuclear agreement with Australia;
(b) if so, the details thereof and if not, the reasons therefore;
(c) whether the Australian Government does not intend to export uranium to India as reported in the media; and
(d) if so, the reasons therefor?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S. M. KRISHNA)

(a) No.

(b) Does not arise.

(c) & (d) The Australian Government has stated that it has a long standing policy not to supply uranium to countries which have not signed the Nuclear Non-Proliferation Treaty (NPT). India is not a signatory to the NPT.
(http://meaindia.nic.in/mystart.php?id=100515994)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 2075
TO BE ANSWERED ON 10.03.2010
2075 SHRI KAMLESH BALMIKI:

NARORA ATOMIC POWER PLANT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has promised to implement several welfare schemes for the benefit of several villagers whose land were acquired for construction of Narora Atomic Power Plants;
(b) if so, the details thereof; and
(c) the present status of these schemes including supply of electricity to these villages?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
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(a) to (c) The construction of Narora Atomic Power Project (NAPP 1&2) started in the year 1976 and the two units began commercial operation in the years 1991 and 1992 respectively. The land for the project was acquired in two phases in 1974 and 1987. In addition to implementation of the rehabilitation and resettlement package including compensation for land finalised then by the state government, the Nuclear Power Corporation of India Limited (NPCIL), as a part of its Corporate Social Responsibility, has been carrying out welfare activities in the villages in the vicinity of NAPS. These are essentially to supplement efforts of the state government and are focused in the areas of health, education and infrastructure. NPCIL, as a generating company, supplies its electricity generation to the grid. The actual supply to the users is done by distribution companies.

(http://www.dae.nic.in/writereaddata/lsus100310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 2090
TO BE ANSWERED ON 10.03.2010
2090 SHRI SURENDRA SINGH NAGAR:

NARORA ATOMIC POWER STATION

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has received any proposal from the Government of Uttar Pradesh to set two new units at Narora Atomic Power Station to enhance its capacity;
(b) if so, the details thereof;
(c) the final decision of the Union Government in this regard ; and
(d) the steps taken by the Union Government in this regard?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
==========
(a) No, Sir.
(b) to (d) Do not arise.

(http://www.dae.nic.in/writereaddata/lsus100310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 2094
TO BE ANSWERED ON 10.03.2010
2094 SHRI P. BALRAM NAIK:

WORLD ASSOCIATION OF NUCLEAR OPERATORS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the representatives of the World Association of Nuclear Operators (WANO) visited Kaiga Atomic Power Station; and

(b) if so, the details thereof and the reasons therefor?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
==========
(a) Yes, Sir
(b) World Association of Nuclear Operators (WANO) is non-government, non-political and non-profit making world organization of nuclear operators with a mission to maximize the safety and reliability of operation of nuclear power plants by exchanging information and encourage communication, comparison and emulation amongst its members. Nuclear Power Corporation of India Limited (NPCIL), a public sector undertaking of Department of Atomic Energy is one of the founder members of this association. All the nuclear power operators of the 30 countries are represented in WANO.
As a part of WANO charter, the general meetings of WANO are held once in two years. NPCIL hosted the 10th Biennial General Meeting (BGM) held in New Delhi from January 31- February 2, 2010. As a part of said meeting, technical tours were organized for the interested members. 18 WANO members visited Kaiga Atomic Power Station from February 3-6, 2010. Other teams of WANO members visited Tarapur and Kudankulam Power Projects. Such tours are a part of every WANO BGM and participants from NPCIL have also visited nuclear power stations in many countries. The technical tours to the nuclear power stations showcase NPCIL's safety performance and the operational practices of nuclear power stations in India which are comparable to the best in the world.

(http://www.dae.nic.in/writereaddata/lsus100310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 2118
TO BE ANSWERED ON 10.03.2010
2118 SHRI JAGADANAND SINGH:

DEVELOPMENT OF CROP VARIETIES USING RADIDATION TECHNIQUES

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the crop varieties developed during each of the last three years using radiation techniques;
(b) whether these crop varieties have been released for commercial production after field trials in agriculture fields;
(c) if so, the details thereof; and
(d) the steps taken by the Government to develop more seeds by adopting this technique?

ANSWER

THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
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(a) List of crop varieties developed during the last three years is as under:

Crop	Variety	Year of Release	Released for	Remarks
Groundnut Mungphali (Arachis hypogaea)	TDG-39 TBG-39	2009 2008	Karnataka Rajasthan	Large seed, Kharif season
	TG-51	2008	W. Bengal Orissa Bihar & N.E. States	Rabi-Summer, Early maturity (~ 90 days)
	TGL-45	2007	Maharashtra	Large seed, Kharif, season
Soybean (Glycine max)	TAMS 98-21	2007	Maharashtra	High yeielding resistant to bacterial pustules,

				myrothecium leaf spot and soybean mosaic virus diseases
Mustard Rai (Brassica juncea)	TPM-1	2007	Maharashtra	Yellow seed tolerant to powdery mildew
Sunflower Suraj mukhi (Helianthus annuus)	TAS-82	2007	Maharashtra	Black seed coat tolerant to drought
Greengram Moong (Vigna radiate)	TM-96-2 (Trombay Pesara)	2007	Andhra Pradesh (rabi and summer) and rice fallows	Resistant to Powdery mildew and Corynespora leaf spot
	TJM-3	2007	Madhya Pradesh (Kharif and summer)	Resistant to Powdery mildew, Yellow mosaic virus and Rhizoctonia root-rot diseases
Pigeonpea Tur, Arhar (Cajanus cajan)	TT-401	2007	Madhya Pradesh, Maharasthra, Gujarat, Chhattisgarh	High yielding, tolerant to pod borer and pod fly damage
Cowpea Chowli / Lobhiya (Vigna unguiculata)	TRC-77-4 (Khalleshwari)	2007	Chhattisgarh (rabi)	Suitable for rice based cropping system

(b) Yes, Sir.
(c) 11 Trombay crop varieties as detailed at (a) above, have been released for commercial production and notified by Ministry of Agriculture, Government of India.
(d) Development of mutant crop varieties is a continuous process. Varients obtained by radiation induced mutation of oilseeds and pulses are being evaluated at BARC and collaborating Agricultural Universities. For dissemination of the research efforts of BARC to the farmers, effective linkages have been established with Indian Council of Agricultural Research (ICAR), State Agricultural Departments, State Agriculture Universities, National and State Seeds Corporations, NGOs, National Institutes, Krishi Vigyan Kendras, progressive farmers etc. Production of nucleus/breeder seeds is undertaken at BARC farms at Trombay and Gauribidanur, Karnataka and also in collaboration with progressive farmers and Agricultural Universities. Breeder seeds are supplied to different

National and State Seeds Corporations for multiplication into foundation and certified seeds to reach farmers.

(http://www.dae.nic.in/writereaddata/lsus100310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 2189
TO BE ANSWERED ON 10.03.2010
2189 SHRI RAMESH RATHOD:

NUCLEAR BAN ON INDIA

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether some countries have lifted nuclear ban imposed by them on India previously;
(b) if so, the details thereof; and

(c) the present status thereof, country-wise?

ANSWER
THE MINISTER OF STATE, INDEPENDENT CHARGE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES, MINISTER OF STATE FOR PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):
= (a) & (b) On 6 September, 2008 the Nuclear Suppliers Group issued a 'Statement on Civil Nuclear Cooperation with India' to permit civil nuclear trade with India.

(c) India has been in dialogue with friendly countries to open up civil nuclear trade with India. In the recent period the following agreements have been concluded:

(i) Cooperation Agreement between the Government of India and the Government of the French Republic on the Development of Peaceful Uses of Nuclear Energy, was signed on September 30, 2008.

(ii) Agreement for Cooperation between the Government of India and the Government of the United States of America concerning Peaceful Uses of Nuclear Energy, was signed on October 10, 2008.

(iii) Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the Construction of Additional Nuclear Power Plant Units in Kudankulam site as well as in the construction of Russian designed Nuclear Power Plants at new sites in the Republic of India, was signed on December 5, 2008.

(iv) Agreement between the Government of the Republic of India and the Government of the Republic of Namibia on Cooperation in Peaceful Uses of Nuclear Energy was signed on August 31, 2009.

(v) Memorandum of Understanding between Department of Atomic Energy of the Government of the Republic of India and the Nuclear Energy Agency , Regulatory Agency of the Government of Mongolia on Cooperation in the Field of Peaceful Use of Radioactive Minerals and Nuclear Energy was signed on September 14, 2009.

(vi) Agreement between the Government of Argentine Republic and the Government of the Republic of India for Cooperation in the Peaceful Uses of Nuclear Energy was initiated on October 14, 2009.

(vii) Agreement for Cooperation between the Government of the Republic of India and the European Atomic Energy Community in the field of Fusion Energy Research was signed on November 06, 2009.

(viii) An agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the use of Atomic Energy for Peaceful Purposes was initiated on December 7, 2009.

(ix) Joint Declaration by India and the United Kingdom on Civil Nuclear Cooperation was signed on February 11, 2010.

(http://www.dae.nic.in/writereaddata/lsus100310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 2194
TO BE ANSWERED ON 10.03.2010
2194 SMT JAYSHREEBEN PATEL:

MISSING OF NUCLEAR DEVICE

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the nuclear device put on Nanda Devi mountain during operation "Blue Mountain" has not been traced so far,
(b) if so, the details thereof and the efforts made by the Government to trace it;
(c) whether the device emits nuclear radiation in the entire Himalayan region; and
(d) if so, the corrective steps proposed to be taken by the Government in this regard?

ANSWER

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

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(a) Yes, Sir.
(b) The nuclear device was a power source containing Pu-238 for powering a system which was installed at Nanda Devi. This power source was lost and has not been traced inspite of several attempts.
(c) The device contained only Pu-238, an alpha emitter, in sealed conditions. There is no danger whatsoever of nuclear radiation either in the Himalayan region or in the down stream of the river Ganga due to this device.
(d) Does not arise, in view of (c) above.

(http://www.dae.nic.in/writereaddata/lsus100310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 740
TO BE ANSWERED ON 04/03/2010
740 SHRI PARIMAL NATHWANI:

SHARE IN ATOMIC ENERGY PRODUCTION

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) the share of atomic energy in India's total production;
(b) in what manner it compares with other advanced countries including France;
(c) the reasons for low production of atomic energy; and
(d) the details of steps taken by Government to increase atomic energy including commissioning of new plants and increased capacity of existing plants?

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

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(a) The current share of nuclear energy in the total generation in the country is about 2.4%

(b) The shares of nuclear generation in other countries are: Country
Share of nuclear energy in total electricity generation %

USA	20
France	76
Japan	25
Russian Federation	17
Germany	28
Republic of Korea	36
UK	13
China	2

(c) The reason for lower share in India is small installed capacity base of 4340 MW.

(d) The present installed nuclear power capacity of 4340 MW is expected to reach 7280 MW by March 2012 with the progressive completion of projects under construction. Projects for 2800 MW capacity addition by 2016/2017 have been

approved in the year 2009. More projects are also planned in future to further increase the nuclear power capacity. The capacity utilization of the existing plants is also expected to be higher through augmentation of domestic uranium supplies and use of imported uranium.

(http://www.dae.nic.in/writereaddata/rsus040310.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 741
TO BE ANSWERED ON 04/03/2010
741 SHRI RUDRA NARAYAN PANY:
SHRI SHREEGOPAL VYAS

DISCOVERY OF MONAZITE IN ODISHA

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government is aware that several moré claimants the land on lease following discovery of contents of thorium-mixed monazite ore under the land at Puri seacoast identified and allotted for Vedant University by Government of Odisha;
(b) whether it is also a fact that around 22 companies have applied for this land in the meantime;
(c) if so, the details thereof;
(d) whether State Government can allot such land to any company or an individual on 'lease', under which prospects of minerals required for atomic energy production also available; and
(e) if not, in such a situation how Government of Odisha is going to allot this disputed land to a disputed company Vedant for setting up of a university?

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) No sir.
(b) & (c) Department of Atomic Energy (DAE) is not involved in any manner in setting up of the Vedant University or in the allocation of land.
(d) & (e) Management of Minerals in the State is the prerogative of the State Government. Under the Mines and Minerals (Development and Regulation) Act, 1957, for Atomic Minerals, specified in the First Schedule of the Act, a State Government cannot grant reconnaissance permit, prospecting license or a mining lease to any company or individual without the previous approval of the Central Government. This case is for setting of University and not for prospecting and mining of minerals. DAE has not notified the above are for reserving for the purpose of exploration of Atomic Minerals.

(http://www.dae.nic.in/writereaddata/rsus040310.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 742
TO BE ANSWERED ON 04/03/2010
742 SHRI B.S. GNANADESIKAN:
SHRI SANTOSH BAGRODIA:

RESTRICTION ON PUTTING NUCLEAR POWER REACTORS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether there is any restriction imposed on putting up US nuclear power reactors in different parts of the country;
(b) if so, the basis and criteria; and
(c) the places where US made nuclear power reactors would be finally put up and by when?

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 (c) Setting up of significant nuclear power capacity through power reactors of 1000 MW or higher capacity in cooperation with foreign countries, including the USA, requires abundant cooling water and sea route for transportation of heavy equipment. Coastal sites, therefore are better suited for such nuclear power parks with eventual capacity of 6000-8000 MW. Two sites, one at Kovvada in Andhra Pradesh and another at Chhayamithi Virdi in Gujarat have been approved in principle for setting up reactors based on co-operation with the USA. Presently discussions on setting up of nuclear power plants are being held with US companies.

(http://www.dae.nic.in/writereaddata/rsus040310.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 743
TO BE ANSWERED ON 04/03/2010
743 SHRI A. ELAVARSAN:

COST OF NUCLEAR POWER TECHNOLOGY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government has asked US to reduce the nuclear power cost and the cost of nuclear power technology it is offering to India;

(b) if so, the details thereof;

(c) whether the cost of the US nuclear power technology is Rs.15-16 crores per MW against Rs.7-8 crore per MW in India; 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) to (d) During informal discussions with US companies in various fora, need for commercial viability of the projects has been emphasised.
(http://www.dae.nic.in/writereaddata/rsus040310.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 744
TO BE ANSWERED ON 04/03/2010
744 SHRI RAMA CHANDRA KHUNTIA:

TARGET OF ATOMIC ENERGY

WILL THE PRIME MINISTER BE PLEASED TO STATE:

(a) the target of Atomic Energy by the end of this five yuear plan;
(b) whether we have been able to achieve the Target; and
(c) if not, the reasons 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) The nuclear power capacity addition target for the XI Plan (2007-12) is 3160 MW.

(b) A capacity of 220 MW has been added by completion of RAPP Unit-5 at Rawatbhata, Rajasthan. Another 220 MW is expected to be added through completion of RAPP Unit-6 by March 2010. Further capacity addition through progressive completion of Kaiga Unit-4 (220 MW), twin units of Kudankulam Nuclear Power Project 1&2 (2000 MW) and Fast Breeder Reactor (500 MW) at Kalpakkam which are in advanced stages of completion. They are likely to be completed in the remaining two years of the Plan period.
(c) Does not arise.

(http://www.dae.nic.in/writereaddata/rsus040310.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 745
TO BE ANSWERED ON 04/03/2010
745 SHRI SYED AZEEZ PASHA:

URANIUM DEPOSITS IN COUNTRY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Uranium Corporation of India has located high value uranium deposits in different parts of the country;
(b) the details of viable and useful funds;
(c) the costs incurred by the Uranium Corporation of India for exploration and other expenses in the last three years;
(d) the details of such findings, State-wise;
(e) the expected revenue and the earmarked share for Andhra Pradesh; and
(f) the present status of such projects in Andhra Pradesh?

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, Atomic Minerals Directorate for Exploration & Research(AMD), a constituent unit under Department of Atomic Energy(DAE) has located uranium deposits in different parts of the country.
(b) The funds are allocated from the sanctioned budget of the Department of Atomic Energy.
(c) The costs incurred by the AMD for exploration and other expenses in the last three years are as follows:
(Rupees in crores)

Year	Non plan	Plan		
		R&D Sector	I&M Sector	Total
2006-2007	59.48	15.74	4.94	20.68
2007- 2008	63.40	29.70	14.35	44.05
2008-2009	99.72	50.81	43.01	93.82
Total	222.60	96.25	62.30	158.55

(d) New deposits of Uranium ore have been identified in Andhra Pradesh, Chattisgarh, Karnataka, Rajasthan, Uttar Pradesh, Himachal Pradesh, Madhya Pradesh and Uttarakhand.
(e) The concerned states can expect royalty only on starting of production of Uranium from the Uranium ore by Uranium Corporation of India Limited(UCIL), which is payable @ 2% on the compensation received by UCIL as fixed by Ministry of Mines Note No.3/1/2005.M.VI dated 19.12.2008.
(f) The Uranium Corporation of India Limited (UCIL) a Public Sector Undertaking of the Department of Atomic Energy is constructing a new mine and processing plant at Tummalapalle in the Cuddapah District, Andhra Pradesh. UCIL also proposes to set up new mines and a processing plant at Lambapur-Peddagattu in the Nalgonda District, Andhra Pradesh. However, these projects can not be taken up for want of all statutory clearances and approval from the Government of India.

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 746
TO BE ANSWERED ON 04/03/2010
746 SHRI S.S. AHLUWALIA:

EXPLORATION OF URANIUM IN JHARKHAND

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the details of the regions in Jharkhand where exploration of Uranium is being carried out by agencies viz., Uranium Corporation of India, since identification of Uranium reserves in the States;
(b) the details of population of displaced from these regions indicating the steps taken for providing them compensations and rehabilitation;
(c) the details of population suffering from ailments caused by exposure to radio active environment around the mines indicating steps taken, if any, for ensuring their diagnosis and rendering appropriate medical care for it; and
(d) the measures taken for rehabilitation of those rendered physically handicapped consequent to such sickness?

ANSWER

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

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(a) Uranium Corporation of India Limited(UCIL), a Public Sector Undertaking under the Department of Atomic Energy, is engaged in mining and processing Uranium minerals. Exploration of Uranium is being carried out by Atomic Minerals Directorate for Exploration & Research(AMD), a constituent unit under Department of Atomic Energy(DAE). Based on AMD's report, UCIL takes up mineable Uranium reserves in the country for commercial exploitation. At present UCIL is operating five underground mines in Jaduguda, Bhatin, Narwapahar, Turamdih and Bagjata, one open cast mine at Banduhurang and two processing plants at Jaduguda and Turamdih all in Jharkhand state.
(b) For setting up these mines in Jharkhand, UCIL has acquired a total land of 1061 acres on payment of total compensation of Rs.5,82,23,612/- (Rupees five crore eighty two lakh twenty three thousand six hundred and twelve only) to about 814(eight hundred and fourteen) displaced families. UCIL has provided employment to total 1263(One thousand two hundred and sixty three) displaced persons as per Rehabilitation & Resettlement Policy of the Company.

(c) The operations of UCIL are carried out under strict surveillance of Atomic Energy Regulatory Board (AERB)/State Pollution Control Board, Director General of Mines & Safety (DGMS) and International Commission of Radiological Protection (ICRP), and as such there is no adverse effect on the public health.
(d) Does not arise.

(http://www.dae.nic.in/writereaddata/rsus040310.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 927
TO BE ANSWERED ON 03.03.2010
927 DR. MURLI MANOHAR JOSHI:
SHRI B.N. PRASAD MAHATO:

THORIUM EXPLORATION

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether some foreign companies have shown keen interest in the field of thorium exploration in the country;
(b) if so, the details of such companies;
(c) whether the Government has explored the potential to generate power by using thorium in the country;
(d) if so, the quantum of power likely to be generated in this field;
(e) whether the required technology for said purpose is available in the country; and
(f) 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):

(a)&(b) The Department of Atomic Energy has no information on this.
(c) Yes, Sir
(d) Around 2,00,000 GW-yr electricity potential exists in India using domestic thorium through the route of breeder technology.
(e) Yes, Sir.
(f) India has formulated a three stage nuclear power programme to optimally use its modest uranium and vast thorium resources. Large scale thorium utilization is contemplated in the third stage of this programme, where Uranium – 233 bred in Fast Breeder Reactors of the second stage, will be used together with thorium. While in technological terms we are ready with the design of Advanced Heavy Water Reactor which would produce around two third of its energy from Thorium, large scale deployment of Thorium for power generation will be mainly in the third stage. This can start once large generation capacity based on fast reactors has been set up in the second stage of our nuclear power programme.

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 936
TO BE ANSWERED ON 03.03.2010
936 SHRI J.M. AARON RASHID:
SHRI ARJUN MUNDA:

ATOMIC PLANTS WITH US COOPERATION

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has identified locations for setting up of atomic power plants with the cooperation of United States of America;
(b) if so, the details thereof alongwith the funds allocated, plant-wise;
(c) the progress made in acquisition of land in various States for this propose; and
(d) the time by which the plants are likely to be made operational?

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
(b) Two sites, one at Kovvada in Andhra Pradesh and another at Chhayamithi Virdi in Gujarat have been approved 'in principle' for setting up nuclear power plants based on cooperation with USA. The requirement of funds for the projects has not been finalized yet. However, a provision of Rs.850 crore for each of the sites has been proposed in the Mid Term Appraisal of the XI Plan (2007-12).
(c) The land acquisition process has just started. The consultation with the states, appointment of nodal agencies and survey to arrive at the plot plan are in progress.
(d) Presently discussions in this regard are taking place with US companies.

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 1026
TO BE ANSWERED ON 03.03.2010
1026 SHRI J.M. AARON RASHID:

AGREEMENT FOR REPROCESSING OF BURNT FUEL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether India and United States of America have arrived at an agreement over right of re-processing the burnt fuel for Nuclear Power Plants;

(b) if so, the details thereof; and

(c) if not, the time by which an agreement in this regard is likely to be signed?

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 (c) Article 6(iii) of the India-US agreement for Cooperation between the Government of India and the Government of the United States of America concerning Peaceful Uses of Nuclear Energy signed on 10 October 2008, inter-alia, states that India will establish a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards. Article 6(iii) of the Agreement calls for consultations on arrangements and procedures within six months of a request by either party and will be concluded within one year.
In March 2009 the US responded to India’s request invoking Article 6(iii) of the Indo-US Agreement on arrangements and reprocessing confirming that the first round of formal consultations, would commence no later than 3 August 2009 and that final agreement on arrangements and procedures is to be reached no later than 3 August, 2010. The first round of negotiations between India and the United States had taken place on 21-22 July 2009 in Vienna. The process of negotiations is a continuous process aimed at arriving at an acceptable agreement within the stipulated time frame.

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GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 1060
TO BE ANSWERED ON 03.03.2010
1060 SHRI VIRENDER KASHYAP
SHRI ANURAG SINGH THAKUR:

ENERGY THROUGH FUSION TECHNOLOGY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether Government proposes to produce energy through Fusion Technology;
(b) if so, the details thereof; and
(c) the time by which it is likely to be implemented?

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) Yes, Sir.
(b) Producing energy through fusion technology is the long term objective of the scientific project in Fusion Science & Technology undertaken by Institute of Plasma Research(IPR). The principal steps in this project are: Basic Research in Magnetic Fusion using tokamaks (Aditya and SST-1) with the developments of associated technologies, participation in International Thermonuclear Experimental Reactor (ITER) Programme and Fusion Technology Programme (i.e. critical technologies development like Test Blanket, magnet, diverter, vessel, Radio Frequency & Neutral Beam etc.) and design and development of a DEMO fusion Reactor.
(c) The steps outlined in (b) above are envisaged over a period of 30-40 years.

(http://www.dae.nic.in/writereaddata/lsus030310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 1043
TO BE ANSWERED ON 03.03.2010
1043 DR. SANJAY SINGH:
SHRI S. ALAGIRI:

CONVERSION OF SEA WATER

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the sea water could be converted into potable water by means of atomic energy;
(b) if so, whether Government has set up/proposes to set up any such project;
(c) if so, the details thereof;
(d) the per litre cost of conversion of sea water into potable water by atomic energy; and
(e) the steps taken/propose to be taken by the Government for large scale conversion of sea water into potable water?

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) Yes, Sir.
(c) Bhabha Atomic Research Centre (BARC) has developed desalination plants based on both Reverse Osmosis (RO) as well as thermal processes. RO plants that have been developed have capacities ranging from five thousand litres per day to eighteen lakh litres per day. An 18 (eighteen) lakh litres per day capacity desalination plant operating on the RO process has been set up at Kalpakkam, Tamil Nadu. Multi Stage Flash (MSF) evaporation based thermal process plant with capacity of forty five lakh litre per day has been set up at Kalpakkam.
BARC has also set up desalination plants at Sheelgaon village in Barmer District, Rajasthan (30,000 litres/day capacity) and Satlana village in Jodhpur District, Rajasthan (30,000 litres/day capacity) in cooperation with Defence Laboratory, Jodhpur for providing drinking water from borewell/brackish water sources. Three desalination plants (5000 litres/day capacity each) have been set up in the Tsunami affected areas of Tamil Nadu for providing drinking water.
…….2/-

(d) The cost of conversion of seawater into potable water using the above technologies varies between 5 to 10 paise/litre depending on local conditions, quality of end product and the technology in use.
(e) Department of Atomic Energy (DAE) has developed and demonstrated technologies which are made available to Government agencies for large scale conversion of sea water into potable water.

(http://www.dae.nic.in/writereaddata/lsus030310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 1023
TO BE ANSWERED ON 03.03.2010
1023 SHRI ASHOK KUMAR RAWAT:

MONITORING OF EXPLORATION WORK

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the main functions of Atomic Mineral Directorate (AMD);
(b) whether the Government has constituted a Committee to monitor exploration on atomic mineral resources in the country; and
(c) If so, the details thereof and the reasons therefor?

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) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent Unit of the Department of Atomic Energy, is engaged in survey and exploration for atomic minerals required for the Nuclear Power Programme of the Country.
(b) & (c) No, Sir. However, the Government has constituted a Committee under the chairmanship of the Cabinet Secretary, which inter alia examines the various issues relating to exploration and mining of uranium so as to help remove the bottlenecks and speed up the activities. The Committee meets periodically.

(http://www.dae.nic.in/writereaddata/lsus030310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 931
TO BE ANSWERED ON 03.03.2010
931 SHRI DATTA MEGHE:
SHRI SARDAR SUKHDEV SINGH LIBRA:
SHRI SARVEY SATHYANARAYANA:
DR. BHOLA SINGH:
PROF. (DR.) RANJAN PRASAD YADAV:
SHRI ASADUDDIN OWAISI:
SHRI MILIND DEORA:

FIRE IN BHABHA ATOMIC RESEARCH CENTRE

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether a major fire broke out at Bhabha Atomic Research Centre in Mumbai leading to death of two young scientists';
(b) if so, the main reason of the fire;
(c) whether the Government has constituted a Committee to look into the causes of fire;
(d) if so, the outcome of the enquiry; and
(e) the steps taken or being taken by the Government to avoid such incidents in future especially in highly protected sensitive security zones?

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) A fire incident took place on December 29, 2009 in one of the chemical laboratories in Bhabha Atomic Research Centre (BARC) resulting in the death of two Ph.D. Students.
(b) Reason for the fire accident as indicated by the report of Investigation Committee set up by BARC is low intensity explosive energy released from accidental mixing of small quantities of reactive chemicals stored in the Chemical laboratory.
(c) Yes, Sir. A Committee has been set up by BARC to inquire into the causes of fire. The Police are also conducting forensic and other investigations.

d& e)BARC Investigation committee has made several recommendations to prevent recurrence of similar incidents. Remedial measures have also been recommended to improve not only safety but also the emergency response to an incident, which can prevent escalation of the incident and can mitigate the consequences. BARC Safety Council is taking further steps for implementation of the recommendations of the Committee to enhance the safety status of all the laboratories.

(http://www.dae.nic.in/writereaddata/lsus030310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 1116
TO BE ANSWERED ON 03.03.2010
1116 SHRI MANISH TEWARI:
SHRI SURESH KUMAR SHETKAR:
SHRI SARVEY SATHYANARAYANA:

CIVIL NUCLEAR AGREEMENT

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the details of Civil Nuclear Energy Co-operation Agreements with various other countries signed by India between 1st Jan, 2005 and 1st Feb. 2010;
(b) the significant commonalities between these various agreements and the difference unique to each of these agreements when contrasted in juxtaposition to each other alongwith a comparative clause wise chart that maps out the similarities or differences in the substantive clauses of each agreement;
(c) whether the non-introduction/non-passage of a law to regulate liability in case of nuclear accidents called the Nuclear Liability Bill is an impediment in foreign investment flowing into the Civilian Atomic Energy Sector;
(d) whether a Nuclear Liability Bill has been approved by the Government and is awaiting introduction in Parliament.
(e) If so, the time by which the Government plans to introduce the proposed bill; and
(f) the guidelines that permit Indian companies to participate in the Civilian Nuclear Energy Sector?

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) India has signed following Civil Nuclear Energy Cooperation Agreements during 01st Jan 2005 and 1st Feb 2010:
(i) Cooperation Agreement between the Government of the Republic of India and the Government of the French Republic on the Development of Peaceful Uses of Nuclear Energy was signed on 30 September 2008. This Agreement has since been ratified.
(ii) Agreement for Cooperation between the Government of India and the Government of the United States of America Concerning Peaceful Uses of Nuclear Energy was Signed on 10 October 2008. This Agreement has since been ratified.

(iii) Agreement between the Government of the Republic of India and the Government of the Republic of Namibia on Cooperation in Peaceful Uses of Nuclear Energy was signed on 31 August 2009. This Agreement has to be ratified. In addition, the following were signed/ initialed:
(i) Agreement between the Government of the Republic of India and the Government of the Russian Federation on Cooperation in the Construction of Additional Nuclear Power Plants Units at Kudankulam site as well as in the Construction of Russian designed Nuclear Power Plants at new sites in the Republic of India was signed on 05 December 2008.
(ii) Memorandum of Understanding between Department of Atomic Energy of the Government of the Republic of India and the Nuclear Energy Agency, Regulatory Agency of the Government of Mongolia on Cooperation in the Field of Peaceful Use of Radioactive Minerals and Nuclear Energy was signed on 14 September 2009.
(iii) Agreement between the Government of the Argentine Republic and the Government of the Republic of India for Cooperation in the Peaceful Uses of Nuclear Energy was initialed on 14 October 2009.
(iv) Agreement for Cooperation between the Government of the Republic of India and the European Atomic Energy Community in the field of Fusion Energy Research was signed on 06 November 2009.
(v) An agreement between the Government of the Republic of India and the Government of the Russian Federation on cooperation in the use of Atomic Energy for peaceful purposes was initialled on 07 December 2009.
(b) As mentioned above, Agreement with France and US have been ratified and the highlights are indicated below. The Agreement dated 5 December 2008 with Russia is specific on cooperation in the Construction of Additional Nuclear Power Plants at Kudankulam Site as well as in the construction of Russian Designed Nuclear Power Plants at New Sites in the Republic of India.

Agreement with France	**Agreement with USA**
A general agreement covering wide areas including nuclear reactors, nuclear fuel and nuclear fuel cycle management; to be followed by specific agreements between the Parties or persons designated by the Parties.	A general agreement covering wide areas including nuclear reactors and aspects of associated nuclear fuel cycle; to be followed by contracts pursuant to the agreement.
Provides of technology transfer on industrial or commercial scale between the Parties or designated persons.	Provides for technology transfer on an industrial or commercial scale between the Parties or authorized persons.
Provides for progressive localization in the territory of the recipient Party.	No specific mention of these issues, however, provides for transfer of information for the design and construction of reactors.
Specifically provides for non-hindrance.	Specifically provides for non-hindrance.

Provides for facilitating fuel supplies for the lifetime operation of supplied nuclear power plants, establishment of long-term contracts between designated entities of the Parties, developing a strategic reserve of nuclear fuel, Termination of cooperation is without prejudice to the implementation of fuel supply commitments.	Provides for fuel supply throughout the operational period of the reactors on contractual basis at prices to be negotiated.
Provides for IAEA safeguards and linkage of safeguards to fuel supplies. Provides for verification measures in case application of IAEA safeguards is not possible.	Provides for IAEA safeguards and linkage of safeguards to fuel supplies. Provides for verification measures in case application of IAEA safeguards is not possible.
Provides reprocessing consent' reprocessing to be done in a national nuclear facility under IAEA safeguards.	Provides consent for reprocessing, but in a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards following the Parties agreeing on arrangements and procedures.
Provides for termination. Termination of cooperation to be without prejudice to the implementation of contracts, ongoing projects and fuel supply commitments made prior to termination.	Provides for termination including right of return; no commitment made with regard to honouring ongoing contracts and projects.

(c) The Government's Foreign Direct Investment Policy does not permit Foreign Direct Investment in the atomic energy sector.
(d) The draft legislation on civil nuclear liability has been approved by the Cabinet & and the same is likely to be introduced in the current session of Parliament.
(e)
(f) The Atomic Energy Act 1962 allows the Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government company. As of today Nuclear Power Corporation of India Limited and Bharatiya Nabhikiya Vidyut Nigam Limited are two public sector undertakings authorized for this purpose. Private sector can participate in setting up of nuclear power plants as a junior equity partner. Private sector in India can also participate in civil nuclear energy sector through supply of components, equipment and works contracts.

(http://www.dae.nic.in/writereaddata/lsus030310.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 276
TO BE ANSWERED ON 25/02/2010
276 SMT. MAYA SINGH:

SHARE OF STATES IN CENTRAL POWER UNITS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that the share of the State out of allocated share of Central Power units of western zone has been reduced from 12.75 percent to 12.03 percent by the Central Government.
(b) if so, the decrease in megawatt due to this;
(c) whether Government would compensate the decrease; and
(d) the reasons for decreasing the State's share?

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 (d) The allocation of share of power amongst the beneficiaries in a region

is determined by Ministry of Power. As far as current allocation of nuclear power in western region is concerned, the following details are provided:
There are two Nuclear Power Stations TAPS-3&4 and KAPS-1&2, benefiting all the states in the Western Electricity Region in addition to TAPS-1&2 which benefit Maharashtra and Gujarat. 85% of the capacity is allocated to the beneficiaries and 15% retained in unallocated quota to meet the varying demands. Madhya Pradesh(MP) has an allocation of 93 MW from KAPS-1&2 and 180 MW from TAPS-3&4. In addition, from the unallocated quota, MP has a share of 30 MW (peak hours) and 34 MW (non peak hours) from these reactors.

(http://www.dae.nic.in/writereaddata/rsus250210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 277
TO BE ANSWERED ON 25/02/2010
277 SHRI PENUMALLI MADHU:

NUCLEAR REACTOR AT KOVVADA

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether it is a fact that in principle approval has been accorded in October, 2009 for a 6 x 1000 MW nuclear reactor at Kovvada in Andhra Pradesh;

(b) if so, the details thereof;

(c) the countries that are cooperating for setting up of the above reactor; and

(d) by when the above reactor would become operational?

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(d) The Government has accorded 'in principle' approval for locating Light Water Reactors (LWRs) based on international cooperation at Kovvada in Srikakulam district of Andhra Pradesh. The site is suitable for setting up of six reactors each having a capacity of 1000 to 1500 MW. The reactors at this site are to be set up in cooperation with one of the suppliers from the USA. Discussions have been initiated with USA companies for formulation of project proposals. These are at initial level. It is aimed to make reactors operational in 13th Plan.

(http://www.dae.nic.in/writereaddata/rsus250210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 278
TO BE ANSWERED ON 25/02/2010
278 SHRI LALIT KISHORE CHATURVEDI:
DR. GYAN PRAKASH PILANIA

SUPPLY OF NUCLEAR FUEL

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the names of the countries that had agreed to supply nuclear fuel after the nuclear deal with United States of America;
(b) the names of the countries and the quantity of nuclear fuel that they promised to supply;
(c) the names of the countries and the quantum of fuel received from them separately and quantum of fuel to be supplied this year for which deal has been struck;
(d) the names of the countries that have not supplied fuel even after giving consent; and
(e) the reasons therefor?

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) France, Russia and Kazakhstan have entered into agreement for supply of nuclear fuel.

(b) Russia has entered into an umbrella agreement for supply of 2000 metric tones (MT) of nuclear fuel starting with the year 2009. Similarly, Kazakhstan has also entered into an umbrella agreement for supply of 2100 MT of nuclear fuel. However, France has entered into an agreement for supply of 300 MT of nuclear fuel as one-time supply.

(c) The quantum of fuel received during the year 2009 is as given below:

France - 300 MT of Natural Uranium
Russia - 120 MT of Natural Uranium
58 MT of Enriched Uranium

The expected quantity of fuel to be supplied during the period from March, 2010 – March 2011, for which deal has been struck, is as given below:
Kazakhstan - 300 MT of Natural Uranium
Russia - 210 MT of Natural Uranium.
(d) & (e) Do not arise.

(http://www.dae.nic.in/writereaddata/rsus250210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO : 279
TO BE ANSWERED ON 25/02/2010
279 DR. GYAN PRAKASH PILANIA:

ATOMIC POWER PLANTS IN RAJASTHAN

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the number of atomic power plants functioning in Rajasthan at present and power generation capacity of each of them;
(b) whether old atomic reactors are not able to generate power to their capacity owing to the paucity of Uranium;
(c) the number of new atomic reactors under construction/proposed to be constructed, their capacity and timeframe; and
(d) whether Uranium has been arranged for the new atomic reactors under construction?

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) There are five Nuclear Power Reactors in operation in Rajasthan. The capacity of these reactors are:

RAPS-1 100 MW
RAPS-2 200 MW
RAPS-3 220 MW
RAPS-4 220 MW
RAPS-5 220 MW
In addition, RAPS-6 (220 MW) is also ready for operation soon.
(b) No Sir.
(c) The construction for RAPP-7&8 (2X700 MW) has just commenced. These are slated for completion in the year 2016-17.

(d) Yes, Sir.

(http://www.dae.nic.in/writereaddata/rsus250210.pdf#page=5)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 413
TO BE ANSWERED ON 24/02/2010
413 SHRI PRADEEP MAJHI:

PRIVATE SECTOR PARTICIPATION IN NUCLEAR POWER SECTOR

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has received any fresh requests from the private sector companies to permit them to participate in nuclear power sector;
(b) if so, the details thereof;
(c) whether the Government has also received any request to modify the Atomic Energy Act, 1962;
(d) if so, the details thereof and the action taken by the Government thereon; and
(e) the details of the private sector which have been given permission by the Government for their participation in nuclear power sector in the country?

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) to (e) The Atomic Energy Act, 1962 allows the Central Government to produce, develop, use and dispose of atomic energy either by itself or through any authority or corporation established by it or a Government Company. As of today Nuclear Power Corporation of India Limited (NPCIL) & Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) are two Public Sector Undertakings authorized for this purpose. Private Sector can participate in setting up of nuclear power plants as a junior equity partner.
Some private sector companies and industry organizations have, at various forums, requested amendment of the Act to allow private sector participation in nuclear power generation.
Private sector in India is in a position to participate in setting up nuclear power plants through supply of components, equipment and works contracts.

(http://www.dae.nic.in/writereaddata/lsus240210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 407
TO BE ANSWERED ON 24/02/2010
407 SHRI ASHOK KUMAR RAWAT:
SHRI BRIJBHUSHAN SHARAN SINGH:
SHRI P.T.THOMAS:
SHRI S.SEMMALAI:

NUCLEAR POWER PLANTS

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) the details of the nuclear power plants presently functioning in the country alongwith their actual capacity and the quantity of power generated by these plants;
(b) the details of the capacity utilization of the atomic power plants under operation, plant/unit-wise;
(c) whether the Government has undertaken any Renovation and Modernisation (R&M) exercise to improve the capacity utilization;
(d) if so, the details thereof; and
(e) the plan drawn to increase power generation in this regard?

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) Presently there are 18 nuclear power reactors in operation with an installed capacity of 4340 MWe. The generation has been 15110 Million Units upto Jan 2010 in the current financial year.
(b) The details are attached as Annuexure
(c) Renovation and Modernisation (R&M) of nuclear power reactors have been carried out at all plants, as needed. The low capacity utilization is due to non availability of fuel in the required quantity and not due to R&M needs.
(d) & (e) Series of efforts on augmentation of domestic Uranium and import of Uranium will improve power generation. In addition the nuclear power capacity is also planned to be increased by completion of projects and new reactors.

Annexure Unit	Present Capacity (MWe)	Capacity Factor (%) (Apr 2009– Jan

		2010)
TAPS-1	160	83
TAPS-2	160	87
TAPS-3	540	59
TAPS-4	540	56
RAPS-1	100	01
RAPS-2	200	892
RAPS-3	220	65
RAPS-4	220	57
RAPS-5	220	05
MAPS-1	220	47
MAPS-2	220	58
NAPS-1	220	39
NAPS-2	220	03
KAPS-1	220	04
KAPS-2	220	55
KAIGA-1	220	52
KAIGA-2	220	58
KAIGA -3	220	58

(http://www.dae.nic.in/writereaddata/lsus240210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 316
TO BE ANSWERED ON 24/02/2010
316 SHRI M.I.SHANAVAS:

NUCLEAR POWER

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government has drawn up an action plan to generate 40,000 MW of atomic energy by 2020;
(b) if so, the details thereof;
(c) the estimated investment required for this purpose alongwith the source from where the funds are propose to be raised;
(d) whether the Government proposes to seek international cooperation to achieve this target; 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):
(a) to (e) The current nuclear power capacity of 4340 MWe can be increased to about 15,000 MWe by the year 2020 by completion of ongoing projects and indigenous efforts. Another 10,000 MWe can be added by the year 2020 through international cooperation with France, Russian Federation and the USA.
Setting up of a total of 40,000 MW capacity through international co-operation in nuclear power is possible but in a longer time frame beyond 2020. The project details have not been finalized. The investment is expected through a combination of equity, domestic & foreign borrowings and intergovernmental credit.

(http://www.dae.nic.in/writereaddata/lsus240210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 375
TO BE ANSWERED ON 24/02/2010
375 SHRI M.I.SHANAVAS:

POLICY FOR INTERNATIONAL CIVIL NUCLEAR COMMERCE

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government is considering to frame a policy for undertaking international civil nuclear commerce that will also have specific provisions for conducting trade with countries where it has not signed a bilateral agreement on the peaceful use of atomic energy;
(b) if so, the details thereof' including the salient features of the policy;
(c) whether such a decision would have any effect on the existing agreement on civil nuclear cooperation agreements with other nations;
(d) if so, whether such an agreements would be in conformity with the international Atomic Energy Agency(IAEA) safeguard; 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):
==========
(a) to (e) A decision on framing a policy for undertaking international civil nuclear commerce has not been taken.

(http://www.dae.nic.in/writereaddata/lsus240210.pdf#page=1)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO : 379
TO BE ANSWERED ON 24/02/2010
379 SHRI RAMESH RATHOD:

NEUTRINO OBSERVATORY

WILL THE PRIME MINISTER BE PLEASED TO STATE:
(a) whether the Government proposes to set up a Neutrino Observatory in the country;
(b) if so, the details thereof;
(c) the likely benefits to the country after establishment of this observatory; and
(d) the funds earmarked and allocated for this project?

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.
(b) The India based Neutrino Observatory (INO) is proposed to be set up through the Department of Atomic Energy and Department of Science & Technology. The project includes construction of a world class underground laboratory under a rock cover of at least 1200 m from all directions. This underground laboratory will be accessed by 7.5 meter wide tunnel of approximately 2 km in length. The primary goal of INO is to study neutrino properties. Determination of neutrino properties is one of the most significant open problems in Physics today. Such studies will help in understanding the interactions among sub-atomic particles at very small length scale. In this underground laboratory a massive 50 kton particle detector will be installed to study the cosmic ray produced neutrinos.
(c) The project will put India back on the world-map of underground science, a position that was held by India a few decades earlier. It is to be noted that the first ever detection of neutrino produced by cosmic rays took place in an underground laboratory at Kolar Gold Fields, South India. Apart from doing front ranking work in the field of neutrino physics, this project will help in (i) development of human resources in basic science research. (ii) contributing to the creation of highly skilled scientists for particle physics and nuclear physics, (iii) using the particle detectors to be developed for this project for other applications in areas like medical imaging.

(d) The estimated cost of the project is Rs.918 crore. The project is currently awaiting the forest clearance from the State Government of Tamilnadu. After

receiving all the clearances, cabinet approval will be obtained to start the construction work.

(HTTP://WWW.DAE.NIC.IN/WRITEREADDATA/LSUS240210.PDF#PAGE=1)

LOK SABHA
UNSTARRED QUESTION NO.399
TO BE ANSWERED ON 24.02.2010

SHRI JAI PRAKASH AGARWAL:

Q.399 PROLIFERATION OF NUCLEAR WEAPONS

Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether the Government has conducted any study regarding proliferation of nuclear weapons which are being brought in our country from our neighbouring countries;
(b) if so, the details thereof; and
(c) the steps taken or proposed to be taken in this regard?

ANSWER
THE MINISTER OF EXTERNAL AFFAIRS (SHRI S.M. KRISHNA)

(a) Government continues to monitor clandestine nuclear proliferation in our neighbourhood. Government has not come across any credible reports of nuclear weapons being brought into India from neighbouring countries.

(b) & (c) Does not arise
(http://meaindia.nic.in/mystart.php?id=100516312)