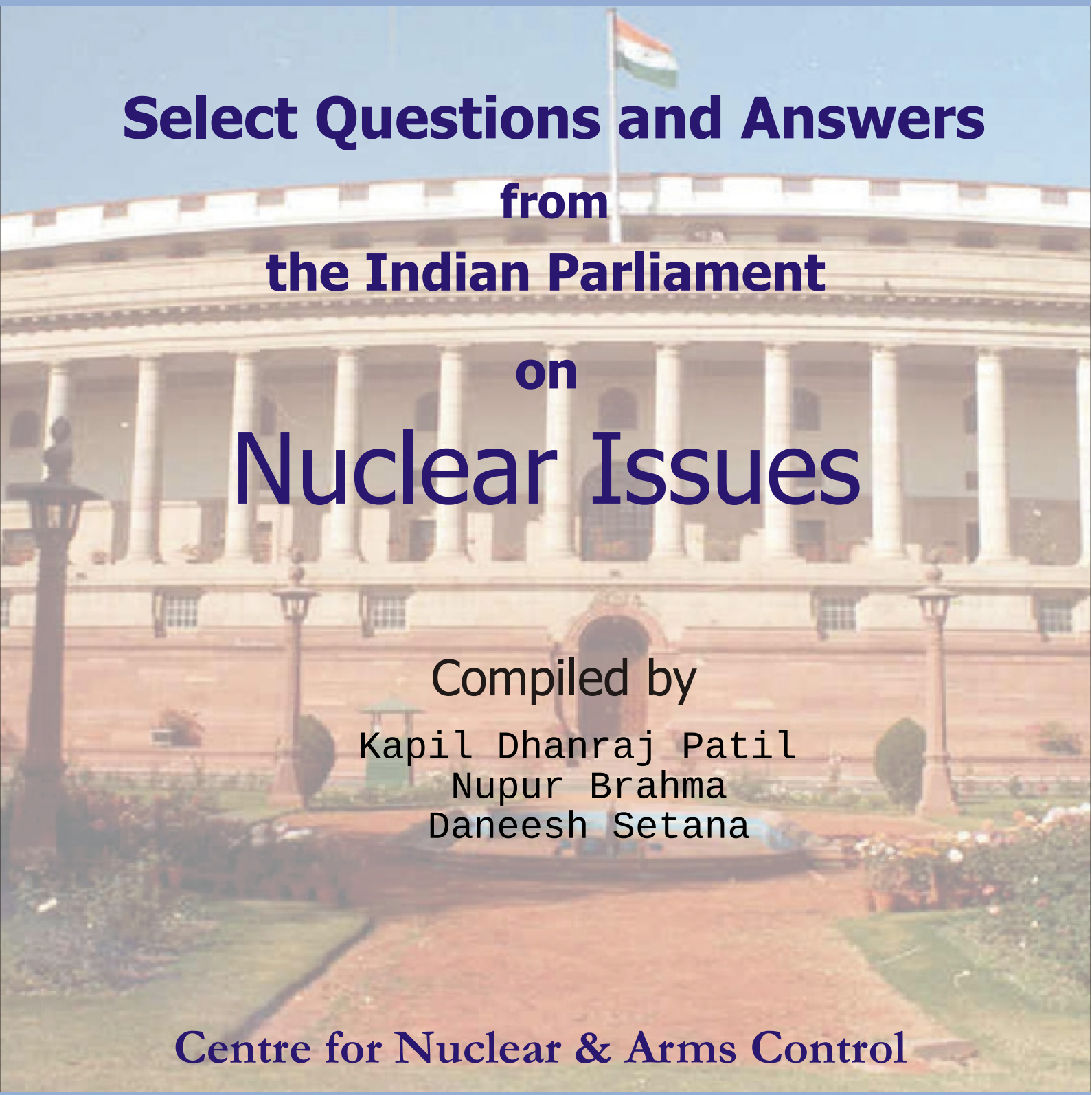
YEAR 2013



Select Questions and Answers from the Indian Parliament on

Nuclear Issues

Compiled by

Kapil Dhanraj Patil
Nupur Brahma
Daneesh Setana

Centre for Nuclear & Arms Control

INSTITUTE FOR DEFENCE STUDIES & ANALYSES

1, Development Enclave, Rao Tula Ram Marg, New Delhi-110010

Visit us: www.idsa.in

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.475
TO BE ANSWERED ON 27.02.2013

PROTEST AGAINST NUCLEAR POWER PLANTS

475. SHRI SYED SHAHNAWAZ HUSSAIN:

Will the PRIME MINISTER be pleased to state:

(a) whether in view of the violent protests against the proposed Kudankulam and Jaitapur Nuclear Power Plants, the Nuclear Power Corporation of India Ltd. has launched a nation wide organised campaign to allay the public apprehensions regarding radioactive radiations from these plants;
(b) if so, the details thereof; and
(c) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVAN CES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANNASAMY):

(a) to (c) The ongoing public outreach programmes were intensified following the Fukushima incident to allay the peopleôs apprehensions about safety of nuclear power, radiation and other related aspects in a credible and structured manner. Nuclear Power Corporation of India Limited (NPCIL) has scaled up these programmes adopting a multi-pronged approach. The focus of the outreach have been the local community, decision makemakers & peopleôs representatives, press and media, students & teachers, opinion makers, and the public at large. The efforts included creation of appropriate public awareness materials and their dissemination to all target groups.

****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus475.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.526
TO BE ANSWERED ON 27.02.2013

SETTING UP OF HEAVY WATER UNIT

526. SHRIMATI DARSHANA JARDOSH:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government proposes to set up one more unit for production of heavy water at Hazira;
(b) if so, the details thereof;
(c) the funds allocated for the purpose;
(d) the time by which the plant is likely to start production; and
(e) the details of direct and indirect employment likely to be generated locally by the proposed new unit?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) The Government is proposing to set up additional streams of production of Heavy Water. However, location of the additional facility would be based on techno-feasibility studies.
(b) Feasibility Studies, including techno-commercial assessment for setting up additional stream for production of Heavy Water in the existing plants have been commissioned.
(c) No funds have been allocated for the purpose.
(d) Production from the proposed additional streams may commence in about five years, after final approval of the project.
(e) Details of direct and indirect employment likely to be generated from the new stream can be assessed only on finalisation of the project.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus526.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.589
TO BE ANSWERED ON 27.02.2013

DELAY IN COMMISSIONING OF JAITAPUR REACTORS

589. SHRI SIVASAMI C.:
SHRI R. THAMARAISELVAN:

Will the PRIME MINISTER be pleased to state:

(a) whether it is true that the work on the reactors at Jaitapur has been badly delayed and it is now expected to go on stream in 2016;
(b) if so, the details thereof;
(c) the initial estimated cost of Jaitapur reactors as against the current expected cost;
(d) whether the Government expects further cost overruns; and
(e) if so, the steps taken by the Government in th
is regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a)&(b) The scheduled date of commencement of work on the project is in the year 2015.
(c)to(e) The figures for the cost of the Jaitapur Nuclear Power Project will be arrived at upon the conclusion of the ongoing techno-commercial discussions between the Nuclear Power Corporation of India Limited and the French side.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus589.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.634
TO BE ANSWERED ON 27.02.2013

THORIUM-BASED REACTORS

634. SHRIMATI ANNU TANDON:

Will the PRIME MINISTER be pleased to state:

(a) whether India is actively pursuing a research programme for developing thorium-based reactors for generation of power and if so, the details thereof;
(b) whether the said research programme is being c arried on in collaboration with other nations and public/private institutions, and if so, the details thereof;
(c) whether the vast reserves of thorium in Keralais being considered as a national resource and adequately protected; and
(d) if so, the details thereof and the steps takenby the Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir. Thorium plays a pivotal role in Indian Nuclear power programme. Right from the inception of Indian nuclear power programme, work has been carried out on various aspects of thorium utilisation-mining and extraction of thorium, fuel fabrication, irradiation in reactors, reprocessing and refabrication. In addition, studies have been carried out regarding use of thorium in different types of reactors.

Details of Research Programme:

(i) Thorium fuel fabrication through powder pellet route has been well established. Few tons of fuel have been made for CIRUS and Dhruva, Pressurised Heavy Water Reactor (PHWR) and for blanket assemblies for Fast Breeder Test Reactor (FBTR). Few pins have been fabricated using mixed oxides of(Th-Pu) for irradiation in research reactors.
(ii) Thoria bundles are used in the initial cores of PHWR. The irradiation experience of thoria fuel in the research reactors CIRUS and Dhruva, PHWR and test irradiations are satisfactory.
(iii) The thoria pins of CIRUS have been reprocessed to obtain U233. The recovered U233has been fabricated as fuel for KAMINI reactor at Kalpakkam. The Post Irradiation Examination of one of the thoria bundle irradiated in PHWR has also been carried out for validation of theoretical analyses.

(iv) Studies have been carried out regarding use of thorium in different types of reactors with respect to fuel management, reactor control and fuel utilisation. ...2 -2- (v)A Critical Facility for Advanced Heavy Water Reactor has been commissioned in 2008 and is used for carrying out experiments to further validate the physics design features of Advanced Heavy Water Reactor.

(v) A small research reactor KAMINI with 30 kWth capacity which utilises nuclear fuel based on Uranium-233 derived from irradiation of thorium, has been in operation at Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam. Generation of power from Thorium:

(i) While it is true that Thorium can be used to produce nuclear energy, it should be noted that Thorium cannot be used directly. Thoriumdoes not contain any fissile isotope, hence it cannot be used in a reactor alone. It can be used with added fissile material that can be either enriched Uranium, Plutonium or Uranium-233 (obtained after irradiation of Thorium).

(ii) Thorium absorbs the neutrons, which can more efficiently produce more Plutonium in Fast Breeder Reactor for a faster growth. Therefore, using Thorium in the first, or an early part of second stage of nuclear power programme will adversely affect the rate of growth of nuclear power generation capacityin the initial periods.

(iii) Due to these reasons, large scale deployment of Thorium is to be postponed till the later part of the second stage. Thorium is to be introduced only at an optimal point during operation of Fast Breeder Reactors in the second stage. Thorium, for power generation is to be used mainly in the third stage.The time taken for large scale thorium deployment is around 3 - 4 decades after the commercial operation of Fast Breeder Reactors with short doubling time. All efforts towards technology development and demonstration are made, so that a mature technology is available in time. The third stage of Indian nuclear power programme contemplates making use of Uranium-233 to fuel Uranium-233 ï Thorium based reactors, which can provide energy independence to the country for several centuries.

(iv) To accelerate thorium utilisation, BARC has designed an Advanced Heavy Water Reactor (AHWR) to serve as a technology demonstrator. The 300 MWe reactor is specially meant for demonstration of large scale commercial utilisation of thorium, generating nearly 70% of its power from in-situ burn up of thorium. The design of all nuclear systems of the reactor has been completed and associated confirmatory R&D is in a very advanced stage. Detailed engineering is being carried out in consultancy mode.

(b)No, Sir.

(c)&(d) Thorium is a naturally occurring radioactive chemical element and it plays a pivotal role in Indian Nuclear power programme. The Government has notified Thorium as Prescribed Substance under the Atomic Energy Act 1962. The Government has also notified

Atomic Energy (Working of the Mines, Minerals and Handling of Prescribed Substances) Rules 1984 under which no person shall mine, mill, process and/or handle any ore mineral or other material from which any one or more of the Prescribed Substances can be extracted,without obtaining a license and except in accordance with the terms and conditions of such license.

*****

e(http://dae.nic.in/writereaddata/parl/bud2013/lsus634.pdf
(http://dae.nic.in/writereaddata/parl/bud2013/lsus634.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.643
TO BE ANSWERED ON 27.02.2013

NUCLEAR POWER GENERATION

643. SHRI JAI PRAKASH AGARWAL:

Will the PRIME MINISTER be pleased to state:

(a) whether nuclear power generation is only 3900 MW in the country at present which is around 3 percent of total installed power generation capacity whereas nuclear power generation in America, Japan and Germany is 19, 29 and 31 percent, respectively;
(b) if so, whether the Government has taken any steps to increase the existing nuclear power generation capacity during the 12th Five Year Plan; and
(c) if so, the details thereof and the steps taken or proposed to be taken by the Government to improve the nuclear power generationcapacity?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a)to(c) In the year 2011, the share of nuclear power generation was 3.7% of the total electricity generation in India. At present, nuclear power capacity is 4780 MW. It is expected to reach 10080 MW by 2017 on progressive completion of four ongoing projects of 5300 MW capacity. The XII FiveYear Plan proposals envisage start of work on 19 new nuclear power reactors with a total capacity of 17400 MW.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus643.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.652
TO BE ANSWERED ON 27.02.2013

INVESTMENT IN NUCLEAR POWER SECTOR

652. SHRI ASADUDDIN OWAISI:

Will the PRIME MINISTER be pleased to state:

(a) whether the indigenous investment in nuclear energy production is not sufficient;
(b) if so, whether the Government proposes to allow in Foreign Direct Investment (FDI) atomic power sector;
(c) if so, the details thereof;
(d) the details of the plans if any, chalked out by the Government in this regard;
(e) whether any proposal has been received by the Government for investment in nuclear power sector; and
(f) if so, the details thereof and the steps takenor being taken by the Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) No, Sir, The nuclear power reactors to be set up are planned to be funded by a mix of debt and equity. The equity requirements areplanned to be met from indigenous sources comprising of investments by Nuclear Power Corporation of India Limited (NPCIL) and its Joint Venture partners and budgetary support.

(b) There is no proposal to allow Foreign Direct Investment in atomic power sector.

(c)to(f) Do not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus652.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.683
TO BE ANSWERED ON 27.02.2013

PRODUCTION IN HEAVY WATER PLANTS

683. SHRI WAKCHAURE BHAUSAHEB RAJARAM:

Will the PRIME MINISTER be pleased to state:

(a) whether the production in the Heavy Water Plant s in the country is going on in accordance with the targets; and
(b) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVAN CES & PENSIONS
AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) Yes, Sir.
(b) Does not arise in view of (a) above.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus683.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. 134
TO BE ANSWERED ON 06.03.2013

SHORE PROTECTION MEASURES

*134. SHRI M.I. SHANAVAS:

Will the PRIME MINISTER be pleased to state:

(a) the details of the shore protection measures undertaken for the safety of the atomic power stations located near the sea coast, namely Tarapur, Madras and Kudankulam Atomic Power Stations;
(b) whether these protection measures are reviewedand retested on regular basis under different technical parameters keeping in view the geographic locations of nuclear plants in the country;
(c) if so, the details thereof; and
(d) the mechanism put in place to monitor the safety parameters of all the nuclear plants in the country?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (d) A statement is laid on the Table of the House.

******

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO.134 FOR ANSWER ON 06.03.2013 BY SHRI M.I. SHANAVAS REGARDING SHORE PROTECTION MEASURES.

(a) Atomic power stations in coastal areas are designed taking into account the technical parameters related to earthquake, tsunami, storm surges, wave run up, floods, tides etc. The shore protection measures provided includeconstruction of civil structures like break waters, bunds, walls etc. to minimize the effect of these natural events.
(b)&(c) The shore protection measures are designedand constructed to withstand the possible impact of natural events. Surveillance of these protection measures is carried out periodically and maintenance activities are undertaken as and when required.
(d) Nuclear power plants in the country are not located in volatile geographic locations. They are sited in stable geographic locations, in low to moderate seismic zones and at sufficient elevations to withstand the maximum postulated extreme natural events. In the context of

tsunami, the nearest major tsunamigenic fault lies at a distance of 1300 km from the eastern coast (Kudankulam & Kalpakkam) and 900 km from western coast (Tarapur & Kakrapar) which is too large to cause any significant impact to the nuclear facilities on Indian shores which have been adequately protected against such natural events. Safety is a moving target in nuclear power plants and is continuously evolving based on the reviews by utilities and Atomic EnergyRegulatory Board (AERB) besides internationally evolving standards. A framework to periodically review safety issues in context of national as well as global nuclear industry events and incorporate necessary measures to strengthen the safety, as required, is in place.

******

(http://dae.nic.in/writereaddata/parl/bud2013/lss134.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1398
TO BE ANSWERED ON 06.03.2013

EXEMPTION TO RUSSIAN NPP SUPPLIERS

1398. SHRI P. VISWANATHAN:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has examined and taken any decision to waive its legal right to claim damages against the Russian suppliers of Nuclear Power Plant (NPP) for units 3 & 4 of Kudankulam Nuclear Power Plant;

(b) if so, the details thereof and the reasons therefor;

(c) whether this exemption from Nuclear Liability Act will be given to other suppliers than Russia; and

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

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)to(d) Matter is under consideration of the Gov
ernment.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1398.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1435
TO BE ANSWERED ON 06.03.2013

RADIOGRAPHY AND RADIOTHERAPY

1435. SHRI PONNAM PRABHAKAR:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government/country's nuclear regulator has not conducted regulatory inspections for both industrial radiography and radiotherapy units in the country; and
(b) if so, the details thereof during the last three years and the current year and the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The Atomic Energy Regulatory Board (AERB) has been conducting the regulatory inspections for both industrial radiography and radiotherapy units in the country.
(b) Regulatory inspections (RI) carried out for radiotherapy facilities during 2010-2013 (up to February 28, 2013) are given below:

	Jan 2010 - -Dec 2010	Jan 2011 - - Dec 2011	Jan 2012 - - Dec 2012	Jan 2013 - - Feb 2013
No. of units inspected	42	133	90	22

Regulatory Inspections (RI) carried out for industrial radiography facilities during 2010-2013 (up to February 28, 2013) are given below:

	Jan 2010 -Dec 2010	Jan 2011 - Dec 2011	Jan 2012 - Dec 2012	Jan 2013 - Feb 2013
No. of units inspected	78	85	115	32

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1435.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1440
TO BE ANSWERED ON 06.03.2013

DISTRIBUTION OF POWER

1440. SHRI P.K. BIJU:
ADV. A. SAMPATH:

Will the PRIME MINISTER be pleased to state:

(a) the time by which Kudankulam nuclear power project is likely to be commissioned; and
(b) the details of the formula put in place to share power which will be generated by the said project between the States?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) All efforts are being made to commission the units 1&2 of Kudankulam Nuclear Power project by April 2013 and October 2013 respectively
.
(b) The power from Kudankulam Nuclear Power Plant to the beneficiary states in the southern Electricity Region has been allocated by t
he Ministry of Power in line with the
prevailing guidelines. The details in this regard a
re as under :

State	Entitlements (MW)
Tamil Nadu	925
Kerala	266
Karnataka	442
Pondicherry	67
Unallocated	300
Total	**2000**

Government has also agreed to consider providing additional 100 MW power to Tamil Nadu.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1440.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1441
TO BE ANSWERED ON 06.03.2013

AERB CLEARANCE FOR SECOND HEAT UP

1441. SHRI SIVASAMI C.:

Will the PRIME MINISTER be pleased to state:

(a) whether the Atomic Energy Regulatory Board (AERB) has given its clearance for the second heat up of the first unit of the 2,000 MW Kudankulam Nuclear Power Plant;
(b) if so, the details thereof;
(c) whether it is true that it could go critical by December, 2013; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.
(b) The Atomic Energy Regulatory Board (AERB) on January 24, 2013, accorded clearance for second heat up and full system tests
of the Unit-1 of Kudankulam Nuclear Power Plant.
(c)&(d) All efforts are being made to attain criticality of the Unit-1 by March 2013, subject to regulatory concurrences at intermediate stages.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1441.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1480
TO BE ANSWERED ON 06.03.2013

NUCLEAR POWER GENERATION

1480. SHRI HARSH VARDHAN:
SHRI SULTAN AHMED:
SHRI MAHESHWAR HAZARI:
SHRIMATI SEEMA UPADHYAY:
SHRIMATI USHA VERMA:

Will the PRIME MINISTER be pleased to state:

(a) the total nuclear power generation in the country before the year 2008 along with the details of increase in the capacity of nuclear power generation after signing of "123 Agreement" as on date;
(b) the assistance being received as per the said agreement;
(c) whether the developed countries are taking steps in the direction of bringing down their nuclear power generation; and
(d) if so, the details thereof ?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The nuclear power generation trends prior to and after fruition of international civil nuclear cooperation are given in the table below:-

Year	**Prior to international civil nuclear co-operation**			**After international civil nuclear co-operation**		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Generation in Million Units	18801	16956	14927	18831	26473	32455

The availability of fuel also enabled the addition of 660 MW capacity by commissioning of three units namely Rajasthan Atomic Power Plant , Units 5&6 (2X220 MW) and Kaiga Generating Station, Unit-4 (220 MW).

(b) The conclusion of the international agreements on nuclear co-operation have enabled the import of fuel and opened opportunities for setting up large capacity Light Water Reactors based on foreign technical cooperation.

(c) No, Sir.

(d) Most of the developed countries with nuclear power are continuing with their nuclear power programmes. Only Germany, Switzerland and Taiwan have made announcements on gradual phasing out of their nuclear power plants.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1480.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1531
TO BE ANSWERED ON 06.03.2013

EPR REACTOR FOR JAITAPUR NPP

1531. SHRI P. LINGAM:

Will the PRIME MINISTER be pleased to state:

(a) whether the issue of supply of EPR reactor forthe proposed Jaitapur Nuclear Power Plant (NPP) was discussed with the French Presidentduring his recent visit to the country; and
(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Yes, Sir. As mentioned in the Joint Statement dated 14 February 2013 issued by India and France during the State visit of President of France to India, the status in regard to the first two EPR units was reviewed and it was noted that Nuclear Power Corporation of India Ltd. and AREVA were engaged intechno-commercial discussions.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1531.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1537
TO BE ANSWERED ON 06.03.2013

LIABILITY OF NUCLEAR SUPPLIERS

1537. SHRI YASHVIR SINGH:
SHRI NEERAJ SHEKHAR:

Will the PRIME MINISTER be pleased to state:

(a) whether as per the Nuclear Liability Act, 2010, nuclear suppliers are not liable to pay more than the cost of supplied equipments as damagein case of nuclear accidents;
(b) if so, the details thereof;
(c) the reasons and the rationale therefor;
(d) whether the Government proposes to amend this provision;
(e) if so, the details thereof; and
(f) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b) Section 4 of the Civil Liability for Nuclear Damage Act, 2010 channels the liability fornuclear damage to the operator of the nuclear installation. The operator of the nuclear installation after paying the compensation for nuclear damage, shall have a right of recourse against the supplier in accordance with Section 17 of the said Act. The supplier has no liability to pay compensation for nuclear damage in the first instance to the victims of a nuclear incident.
(c) Under the Civil Liability for Nuclear Damage Act, 2010 the liability of the operator is strict and based on the principle of no-fault liability with the underlying objective to provide prompt compensation to the victims of a nuclear incident.
(d) to (f) There is no such proposal at present.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1537.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1586
TO BE ANSWERED ON 06.03.2013

MINING OF RARE EARTH MATERIAL

1586. SHRI N. PEETHAMBARA KURUP:

Will the PRIME MINISTER be pleased to state:

(a) the details of running mining projects undertaken by the Indian Rare Earths Limited (IREL);
(b) the details of the rare earth material mined by IREL including its Chavara Mineral Division, Kollam during the last three years;
(c) the details of projects proposed to be undertaken in future;
(d) whether it is a fact that the activities of this division is diminishing day by day; and
(e) if so, the action taken/proposed to be taken by the Government to increase the mining activities of this division?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Sir, running mining projects of Indian Rare Earths Limited (IREL) are located at Orissa Sand Complex (OSCOM) at Chatrapur (Odisha), at Manavalakurichi (Tamil Nadu) and at Chavara (Kerala).
(b) No rare earth material occurring as an independent mineral has been mined by IREL during the last three years. However, the monazite rich tailings resulting from mining of Beach Sand Minerals have been stored as per the guidelines of Atomic Energy Regulatory Board (AERB) for extraction of thorium, uranium and rare earth material from monazite in future.
(c) The proposed projects are: Project for capacity expansion of mining and mineral separation unit at OSCOM, and Separated high pure rare earths project at Rare Earth Division of IREL at Chavara, Kerala.
(d) Yes Sir, due to limited availability of mineable land carrying raw beach sand, and gradual decline in heavy mineral contents in the sand, the activities at Chavara and Manavalakurichi are declining during recent years.
(e) To expand its activities in the region, IREL has identified options for: (i) acquiring land from the land owners at Vellanathuruthu, Pandarathuruthuand Ponmana area of Chavara mines; (ii) outright purchase package and/or lease package for acquiring land at Karithura, Chavara; (iii) collecting raw sand from Neendakara Port area with the help of State Government and Kerala Minerals and Metals Ltd.; (iv) purchase of dredged-out sand from

Neendakara harbour area; and (v) acquiring land formining purposes from stake holders having surface right in the mining areas of Chavaraand Manavalakurichi.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1586.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1587
TO BE ANSWERED ON 06.03.2013

TRAINING TO DEAL WITH EMERGENCY SITUATIONS

1587. SHRI SYED SHAHNAWAZ HUSSAIN:

Will the PRIME MINISTER be pleased to state:

(a) whether training is imparted to employees of nuclear power plants to deal with emergency situations/natural disasters like earthquake/tsunami;
(b) if so, the details of the training programmes organised from 2007 to till date, year-wise and plant-wise; and
(c) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Yes Sir. A structured training programme for training the plant personnel on various plant procedures including Emergency Operating Procedures(EOP) for handling off-normal conditions is in place. The emergency procedures include contingencies arising out of floods, tsunamis, cyclonic storms, earthquakes and fire. Tsunamis and cyclonic storms are relevant to coastal sites and training covers theseaspects for the personnel at coastal sites. The relevant training programmes on EOPs foroff-normal conditions are being regularly conducted for the plant personnel in batches at all the nuclear power plants. Regular retraining on these topics is also impartedto the operation personnel as a part of the licensing process. The details of training programmes organised to deal with emergencies / natural disasters year-wise and station-wise, since 2007, are given below:-

	Station Number of training programmes on natural calamities year-wise					
	2007	2008	2009	2010	2011	2012
TAPS-1&2	8	4	4	5	5	7
TAPS-3&4	8	6	8	15	6	12
RAPS- &2	19	10	13	13	41	20
RAPS-3&4	9	7	14	21	34	40
RAPS- 5&6	6	5	8	6	28	20
MAPS	10	9	4	12	37	11
NAPS 4		4	4	3	11	6
KAPS 5		3	2	6	12	8
KGS-1 to 4		5	4	4	21	17

TAPS ï Tarapur Atomic Power Station, Tarapur, Maharashtra
RAPS ï Rajasthan Atomic Power Station, Rawatbhata, Rajasthan
MAPS ï Madras Atomic Power Station, Kalpakkam, Tamil Nadu
NAPS ï Narora Atomic Power Station, Narora, Uttar Pradesh
KAPS ï Kakrapar Atomic Power Station, Kakrapar, Gujarat
KGS ï Kaiga Generating Station, Kaiga, Karnataka
(c) Does not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus1587.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 160
TO BE ANSWERED ON 07.03.2013

EXPANDING OF HEAVY WATER PRODUCING CAPACITY

*160. SHRI BHARATSINH PRABHATSINH PARMAR:

Will the PRIME MINISTER be pleased to state:

(a) the action that has been taken by the Department of Atomic Energy as on date, to set up one more stream for production of heavy water at Hazira of Gujarat, as there are adequate infrastructure facilities already available which would minimize the cost for the proposed new stream, the details thereof;
(b) the amount of fund that would be allocated by DAE in this regard;
(c) by when, this proposed new stream would be going to start production of heavy water, the specific time-limit thereof; and
(d) the number of direct and indirect local employment going to be generated by this proposed new stream?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (d) A statement is laid on the Table of the House.

******

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO. 160
FOR ANSWER ON 07.03.2013 BY SHRI BHARATSINH PRABHATSINH PARMAR REGARDING EXPANDING OF HEAVY WATER PRODUCING CAPACITY

(a) Feasibility Studies, including techno commercial assessment for setting up additional stream in the existing Plants under Heavy Water Board have been commissioned. The location of the additional facility would be based on the outcome of the techno-feasibility studies.
(b) to (d) The detailed project report on finalization, will spell out the requirement of funds and time schedule.

******

(http://dae.nic.in/writereaddata/parl/bud2013/rssq%20160.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1087
TO BE ANSWERED ON 07.03.2013

DELAY IN JAITAPUR PLANT

1087. DR. K.P. RAMALINGAM :
SHRI T.M. SELVAGANAPATHI :

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that the work on the reactors at Jaitapur had been badly delayed and it is now expected to go on stream in 2016;
(b) if so, the details thereof;
(c) whether it is also a fact that Government expects that there will be further cost overruns; and
(d) if so, the steps taken by Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a)&(b) The scheduled date of commencement of work on the Jaitapur project is in the year 2015.
(c)&(d) The figures for the cost of the Jaitapur Nuclear Power Project will be arrived at upon the conclusion of the ongoing techno-commer
cial discussions
between the Nuclear Power Corporation of India Limi
ted and the French
counterpart.
*****
(http://dae.nic.in/writereaddata/parl/bud2013/rsus%201087.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1088
TO BE ANSWERED ON 07.03.2013

CLEARANCE OF KUDANKULAM NUCLEAR POWER PLANT

1088. DR. K.P. RAMALINGAM :

Will the Minister of ATOMIC ENERGY be pleased to state:

(a) whether it is a fact that the Atomic Energy Regulatory Board gave its clearance for the second heat up of the first unit of the 2,0
00 MW Kudankulam nuclear power plant;
(b) if so, the details thereof;
(c) whether it is a fact that it could go critical
by December, 2013; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.
(b) The Atomic Energy Regulatory Board (AERB) on January 24, 2013 accorded clearance for second heat up and full syst
em tests of the Unit-1 of Kudankulam Nuclear Power Plant.
(c)&(d) All efforts are being made to attain criticality of the Unit-1 by March 2013, subject to regulatory concurrences at intermediate
stages.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1088.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1089
TO BE ANSWERED ON 07.03.2013

SCIENTIFIC TECHNO-ECONOMIC SCRUTINY OF JAITAPUR PROJECT

1089. SHRI P. RAJEEVE :

Will the PRIME MINISTER be pleased to state:

(a) whether the reactors proposed to be used in Jaitapur Nuclear project has been subjected to an independent, Scientific techno-economic scrutiny and safety audit;
(b) if so, the details thereof;
(c) whether any post-Fukushima, modification are incorporated in this reactor; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) The design, safety and associated aspects of the Evolutionary Pressurized Water Reactors (EPRs) proposed to be set up at Jaitapur are reviewed by regulatory authorities of Finland, France and China where these reactors are under various stages of construction. EPRs have been recently licensed in UK after review of its design and safety. In India, Nuclear Power Corporation of India Limited (NPCIL) has reviewed the design, safety and other associated aspects of EPRs. Technical and scientific aspects related to design and safety of the EPRs proposed to be set up at Jaitapur, have also been reviewed independently by an expert group constituted by Atomic Energy Commission (AEC) in the year 2011. The economic/commercial aspects would depend on the business model adopted,particularly, the division of scope of work between the French and Indian partners. Discussions in this regard are in progress between NPCIL and AREVA, France. (c) Yes, Sir. (d) The post Fukushima review of the Evolutionary Pressurised Water Reactor (EPR) safety by the French regulatory authority, ASN, hasbeen completed. Safety up-gradation and modifications are being carried out as per recommendation of ASN in France and the proposed EPR units at Jaitapur will also have these provisions.
*****
(http://dae.nic.in/writereaddata/parl/bud2013/rsus1089.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1091
TO BE ANSWERED ON 07.03.2013

ILL-EFFECTS OF RADIATION OF NUCLEAR POWER PLANTS ON

LOCAL POPULATION
1091. DR. T. SUBBARAMI REDDY :
SHRI AAYANUR MANJUNATHA :

Will the PRIME MINISTER be pleased to state:

(a) whether some studies has been conducted on theill-effects of radiation on the villages around operational nuclear power plants in the country;

(b) if so, the main findings of these studies;

(c) whether Government has plans for relocation ofvillagers within a specified radius of operational nuclear power plants;

(d) if so, the details of relocation package that Government has offered to the villagers;

(e) whether Government has consulted the State Governments in respect of these studies and the relocation packages; and

(f) if so, the response of the State Government thereto?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b) Yes, Sir. Radiation levels around the nuclear power plants are negligibly higher than the background radiation. While average background radiation level is 2400 micro Sievert per year, at plant site radiation levels are higher from the average by 1 to 25 micro Sievert per year. Therefore, there is no ill effect of radiation around nuclear power plants. The epidemiological survey for healthassessment in respect of employees working in Nuclear Power Plants (NPP) have been carried out in detail. The studies have found that there has not been any rise in cancer morbidity, birth defects or any other ailments compared to areas away from NPPs. Annual medical checkups are carried out for all occupational workers, results of which also established that there is no ill effect of radiation in and around NPPs. In order to analyse the effect of radiation, on air, water, soil, vegetation, crops, milk, fish etc. around each of the nuclear power plant site, Environmental Survey Laboratories (ESL) are established at

all sites several years before setting up of the plant. The monitoring of environmental matrices by ESL before and after operation of nuclear power plant has established that there is no significant change in radioactivity or radiation level in environment compared to the baseline data.
(c) No, Sir
(d)to(f) Do not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1091.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1092
TO BE ANSWERED ON 07.03.2013

APPROPRIATE ARRANGEMENT FOR THE DISPOSAL OF NUCLEAR WASTES

1092. SHRI BHUPENDER YADAV :

Will the PRIME MINISTER be pleased to state:

(a) whether Government has made appropriate arrangement for the disposal of nuclear wastes;
(b) if so, the details thereof; and
(c) the details of agreement done with global companies for nuclear energy supply, so far?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a)&(b) Yes, Sir. Nuclear waste in gaseous, liquidand solid forms is generated during operation & maintenance activities of nuclear power plants. Theprocessing technology adopted for management of nuclear waste is summarised below: (1) Gaseous waste is treated at the source of generation. The techniques used are adsorption on activated charcoal and filtration by high efficiency particulate air filter. The treated gases are then diluted with exhaust airand discharged through tall stack with monitoring. (2) Liquid waste streams are treated by various techniques, such as filtration, adsorption, chemical treatment, evaporation, ion exchange; reverse osmosis etc. depending upon the nature, volume & radioactivity content. The emphasis is on volume reduction and the concentrate generated therefore is immobilisedin inert materials like cement, etc. (3) The radioactive solid waste generated during operation and maintenance of nuclear power plants is segregated and volume is reduced using various technologies like compaction and incineration. The solid/solidified waste is packaged in suitable containers to facilitate handling, transport and disposal. Disposal of waste is carried out in specially constructed structures such as stone lined trenches, reinforced concrete trenches and tile holes. In addition, nuclear waste is also generated duringreprocessing of spent fuel. The processing technology adopted for treatment & disposal of thistype of waste is summarised below: (i) India has adopted closed fuel cycle option, which involves reprocessing and recycling of the spent fuel. During reprocessing, 2-3 percentof the spent fuel becomes waste and the rest is recycled. This 2-3 percent waste, called high level waste (HLW), is converted into glass through a process, called vitrification. The vitrified waste is stored for 30-40 years for cooling in order to dissipate the heat generated during decay of fission products. We have a Solid Storage Surveillance Facility with constant cooling and surveillance for interim storage of vitrified waste product at Tarapur (Maharashtra). Another such facility is being constructed at Kalpakkam (Tamil Nadu). These

storage facilities have sufficient capacity for vitrified waste that will get generated in the next 30-40 years.
(c) Enabling Inter governmental agreements have been signed with the USA, France and Russian Federation in respect of setting up Light Water Reactors based on technical co-operation. The discussions with vendors from thesecountries on detailed commercial agreements are at various stages.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1092.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. 238
TO BE ANSWERED ON 13.03.2013

PRIVATE SECTOR PARTICIPATION IN NUCLEAR POWER GENERATION

*238. SHRI S. SEMMALAI:

Will the PRIME MINISTER be pleased to state:

(a) the extent to which the private sector is participating in the supply of equipment and services for nuclear power generation in the country;
(b) whether there has been any request from the private sector to enable them to participate in nuclear power generation as a major partner; and
(c) if so, the details thereof and the reaction ofthe Government thereto?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (c) A statement is laid on the Table of the House.

******

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO.238 FOR ANSWER ON 13.03.2013 BY SHRI S. SEMMALAI REGARDING PRIVATE SECTOR PARTICIPATION IN NUCLEAR POWER GENERATION

(a) The participation of the Indian private sector in the supply of equipment and services for nuclear power generation in the country has increased considerably over time. The Indian private sector manufactures several reactor components, equipments and systems, and provide services in core areas that include construction, fabrication and erection of equipment, piping, electrical, instrumentation, and consultancy, auxiliary and logistical services.
(b) The 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 in nuclear power generation as a majority partner.
(c) For the present, the 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. Private sector can participate insetting up of nuclear power plants as a junior equity partner.

******

(http://dae.nic.in/writereaddata/parl/bud2013/lss238.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2625
TO BE ANSWERED ON 13.03.2013

ATOMIC POWER GENERATION

2625. SHRI SURENDRA SINGH NAGAR:

Will the PRIME MINISTER be pleased to state:

(a) whether the technology adopted in the atomic power sector is costlier in India vis-a-vis that of Russia, China and other developed countries;
(b) if so, the reasons therefor; and
(c) the steps taken by the Government to set up and make projects operational in the country on the lines of Russia, China and other developed countries?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) No, Sir. The cost of nuclear power, inter-alia,depends on the type of technology, life of plant, cost of fuel etc. The levelised cost of power from indigenous Pressurised Heavy Water Reactors is comparable to that from nuclear power plants in developed countries and such cost in respect of Light Water Reactors (LWRs) being set up in the country with foreign technical cooperation is also expected to be so.
(b)&(c) Do no arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus2625.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2626
TO BE ANSWERED ON 13.03.2013

SECURITY THREAT TO KUDANKULAM POWER PLANT

2626. SHRI M.I. SHANAVAS:

Will the PRIME MINISTER be pleased to state:

(a) whether there is any security threat to Kudankulam Nuclear Power Plant (KNPP);
(b) if so, the details thereof;
(c) whether any anonymous threat letter has been received in KNPP;
(d) if so, the details thereof; and
(e) the measures taken by the Government/KNPP to enhance the security of the plant and personnel?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a)&(b) Though there is no specific security threat to KKNPP at present, Department of Atomic Energy installations and its residential colonies continue to remain potential targets of outfits and elements inimical to the interest of India.
(c)&(d) Yes Sir, on 15.05.2012, 03.01.2013 and 08.01.2013 anonymous letters were received at KKNPP threatening to bomb blast at plan
t and kidnap senior officials.
(e) In view of the threat, additional security personnel of Central Government and Government of Tamil Nadu have been placed in the plant as well as in the colony area. Constant additional vigil is being maintained.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus2626.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2654
TO BE ANSWERED ON 13.03.2013

PERMISSION TO EXPORT MONAZITE

2654. SHRI KHAGEN DAS:

Will the PRIME MINISTER be pleased to state:

(a) whether as per guidelines of Atomic Energy Regulatory Board (AERB), no individual or company or entity is permitted to export Monazite;
(b) if so, the details thereof;
(c) whether it is true that some individuals/companies are unauthorisedly exporting Monazite without any licence and if so, the details thereof;
(d) whether cases of some individuals or companies who have been allowed to keep sand which contain Monazite after removing other minerals fromit have come to the notice of the Government;
(e) if so, the details thereof; and
(f) the action taken by the Government in the matter?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)& (b) Monazite is a óPrescribed Substanceô under Sec. 2(g) of Atomic Energy Act 1962 read with the Gazette Notification No.S.O.61(E) dated 20.01.2006. The Atomic Energy (working of the mines, minerals and handling of prescribed substances) Rules 1984 govern the grant of licences for mining, milling, processing and/or handling any ore, mineral, or other material from which prescribed substance can be extracted. The term óhandlingô includes manufacture, possession, storage, usage, transferring by sale or otherwise, export, import, transport or disposal of the said substance. Since Monazite is a óprescribed substanceô, the Department of Atomic Energy (DAE), Government of India, as a policy, has restricted all activities in respect of this substance to Government entities only. Indian Rare Earths Ltd. (IREL), a Public Sector Undertaking under the Department of Atomic Energy, is the only organisation that has been permitted till date to export monazite. The Department has not permitted any other individual or company or entityto export Monazite.
(c) No, Sir. While the DAE has not given export licences to any private entities, reports have appeared in certain sections of the press suggesting illegal exports of monazite. The DAE has initiated steps to put in place comprehensive systems to check any such exports, through appropriate pre-export regulatory checks, and radiation monitoring at Ports.

(d) & (e) Yes, Sir. The Department has allowed the following entities to store Monazite-tailings within the plant premises where such tailings are stored in trenches in an isolated location within the plant premise with institutional control of AERB and topped with silica rich sand: i. M/s Trimex Sands Pvt. Ltd., Srikakulam, Andhra Pradesh ii. M/s Kerala Minerals and Metals Limited, Chavara, Kerala iii. Authoor Plant of M/s V.V.Minerals, Tamilnadu iv. M/s V.V.Minerals, Yellapetta, Andhra Pradesh v. M/s Miracle Sands and Metals, Tamilnadu
(f) These storage sites are fenced to avoid unauthorized access. Radiation-caution boards are displayed and radiation levels in and around these sites are periodically monitored. The radiation-level at the monazite enriched storage sites are also checked during the regulatory inspection by AERB to check whether theyare comparable with the natural background levels.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus2654.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2569
TO BE ANSWERED ON 13.03.2013

SCHEMES FOR COMMUNITY PARTICIPATION

2569. SHRIMATI ANNU TANDON:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government is considering any schemes for community participation in areas where nuclear power plants are being proposed; and
(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a) Yes, Sir.
(b) Nuclear Power Corporation of India Limited has taken up welfare activities around all nuclear power plants and rehabilitation & resettlement activities at new project sites. The activities include initiatives in education, health, social welfare sectors and improvements in infrastructure e.g. drinking water schemes, village approach roads etc. Training programmes on tailoring, stitching, computer education etc. are also conducted for the skill development of the local people.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus2569.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2668
TO BE ANSWERED ON 13.03.2013

DIRECTORATE OF RADIATION SAFETY

2668. SHRI KISHNBHAI V. PATEL:
SHRI PRADEEP MAJHI:

Will the PRIME MINISTER be pleased to state:

(a) whether the Atomic Energy Regulatory Board (AERB) has signed any Memorandum of Understanding (MoU) with the State Governments for setting up of Directorate of Radiation Safety in the recent past;
(b) if so, the details in this regard along with the names of States;
(c) the details of the terms and conditions along with the aims and objectives of said MoU; and
(d) the number of persons engaged in various diagnostic centres in these States including Odisha and Gujarat who will be benefited by the said MoU?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) &(b) Yes Sir. The Atomic Energy Regulatory Board (AERB) has signed MOUs relating to setting up of Directorate of Radiation Safety (DRS) with the States of Kerala (1999), Madhya Pradesh (2010), Tamil Nadu (2010), Mizoram (2011), Punjab (2011), Chhattisgarh (2012), Gujarat (2012), Himachal Pradesh (2012), Maharashtra (2013) and Odisha (2013).
(c) The objective underlying the setting-up of the State-level DRS is to strengthen the safety regulatory control over medical diagnostic X-ray facilities in view of the large number of diagnostic X-ray units/facilities spread across the country and the accelerated growth in their numbers. The terms and conditions of the MoU call for the State Government to set up a DRS with required staff with specified designations and academic and professional qualifications. The DRS is responsible for pursuing with the medical X-ray installations registration/renewal with AERB; verifying the conditions stipulated by AERB before registration/renewal of registration; sending information to AERB about inspections of diagnostic X-ray installa tions in the State on a quarterly basis; organising public awareness programmes on radiation safety etc.
(d) The MoUs between AERB and the State Governments provide for in the Directorate of Radiation Safety a Director, Radiation Safety Inspectors, Technical Assistants and support staff. The State Government will determinethe required numbers of Radiation Safety Inspectors, Technical Assistants and supportstaff. With formation of State-level Directorate of

Radiation Safety, including inthe states of Gujarat and Odisha, the users of medical diagnostic X-ray equipment will benefit from safe operation of medical diagnostic X-ray equipment from the radiological safety perspective.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus2668.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2675
TO BE ANSWERED ON 13.03.2013

PROTEST AGAINST JAITAPUR NUCLEAR POWER PLANT

2675. SHRI RAJIV RANJAN SINGH ALIAS LALAN SINGH:

Will the PRIME MINISTER be pleased to state:

(a) whether strong protest is being registered by local farmers and fishermen against setting up of Jaitapur Nuclear Power Plant;
(b) if so, whether they are still adamant on protest even after being given enhanced compensation;
(c) if so, the details thereof;
(d) whether the above project is costlier than the thermal and hydel power projects of the country; and
(e) if so, the reaction of the Government thereto?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a) There have been protests by a section of the local people against setting up of the Jaitapur nuclear power plant.
(b)&(c) The preparation for disbursement of the enhanced compensation to the land title holders has been started. However, certain groups ideologically opposed to nuclear power are continuing their opposition tothe project.
(d)&(e) The cost of the Jaitapur Nuclear Power project will be arrived only after conclusion of the on-going techno-commercial discussions between the Nuclear Power Corporation of India Limited and the French side. The effort is to arrive at a viable tariff regime comparable to that of contemporary thermal and hydel power projects in the region.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus2675.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 251
TO BE ANSWERED ON 14.03.2013

LIABILITY OF SUPPLIERS IN NUCLEAR ACCIDENTS

*251. SHRI ARVIND KUMAR SINGH:

Will the PRIME MINISTER be pleased to state:
(a) whether as per the Nuclear Liability Act, 2010, nuclear suppliers are not liable to pay more than the cost of supplied equipments as damage in case of nuclear accidents;
(b) if so, the details thereof;
(c) the reasons and the rationale therefor;
(d) whether Government would amend this provision;
(e) if so, the details thereof; and
(f) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (f) A statement is laid on the Table of the House.

******

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.251 FOR ANSWER ON 14.03.2013 BY SHRI ARVIND KUMAR SINGH REGARDING LIABILITY OF SUPPLIERS IN NUCLEAR ACCIDENTS

(a) & (b) Section 4 of the Civil Liability for Nuclear Damage Act, 2010 channels the liability for nuclear damage to the operator of the nuclear installation. The operator of the nuclear installation, after paying the compensation for nuclear damage, shall have a right of recourse against the supplier in accordance with Section 17 of the said Act. The supplier has no liability to pay compensation for nuclear damage in the first instance to the victims of a nuclear incident.
(c) Under the Civil Liability for Nuclear Damage Act, 2010 the liability of the operator is strict and based on the principle of no-fault liability with the underlying objective to provide for prompt compensation to thevictims of a nuclear incident.
(d) There is no such proposal at present.
(e) Does not arise in view of answer to (d).
(f) Covered under answer to (c).

******

(http://dae.nic.in/writereaddata/parl/bud2013/rssq251.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1861
TO BE ANSWERED ON 14.03.2013

QUALITY OF THE EQUIPMENTS AT KUDANKULAM

1861 SHRI D. BANDYOPADHYAY:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that inspite of loading of uranium fuel rods at the 1000 MW capacity unit of the Kudankulam Nuclear Plant by October, 2012, the unit did not produce a single unit of electricity so far; (b) if so, whether it is due to faulty design or bad quality of the equipment supplied; and (c) if so, the corrective actions that have been initiated by Government to make the unit function and to punish those who are guilty?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a) After loading of the fuel, a series of activities including integrated system tests, first criticality (start of fission chain reaction for the first time), subsequent performance tests etc. in line with stage-wise clearances by the Atomic Energy Regulatory Board are needed to be carried out before synchronisation of the unit with the grid and start of generation. These activities are in progress.
(b) No, Sir.
(c) Does not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1861.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1862
TO BE ANSWERED ON 14.03.2013

STEPS TO ALLAY THE FEAR FOR KALPAKKAM PROJECT

1862 SHRIMATI VASANTHI STANLEY
:
Will the PRIME MINISTER be pleased to state:

(a) the steps taken by the Ministry to allay the fear in the minds of the people of coastal area regarding the Kalpakkam project; and (b) the steps taken by the Ministry to implementthe project immediately as the plant being the other alternative for power shortage?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The ongoing outreach activities around Kalpakkam site have been scaled up to allay apprehensions of the people living in the vicinity. The outreach campaigns are organised through structured programmes in simple and local language. These includes organising visits to the site, awareness lectures and presentations in schools/colleges, briefings to press periodically and press meets on radiation and cancer, briefing to peopleôs representatives and the state officials. The awareness material in simple and local language is also distributed to all the sections of the society around the site.
(b) The 500 MW Prototype Fast Breeder Reactor at Kalpakkam is progressing as per the revised schedule, which envisages commissioning by March 2015.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1862.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1863
TO BE ANSWERED ON 14.03.2013

HIGH COST OF THE NUCLEAR POWER PLANT

1863. SHRIMATI VASANTHI STANLEY:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that constructing and operating nuclear power plants are much costlier than operating coal or combined cyclegas turbine;
(b) whether there is any special research, workshop organized to share the advanced technology of the developed countries in this regard; and
(c) whether the Ministry has also done research tobring down the running cost of the nuclear power plants?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a) The capital cost of nuclear power plants is higher than that of thermal power plants using coal and gas. However, the tariffs of
nuclear power are comparable to those of contemporary thermal power plants located in the area.
(b) No, sir.
(c) Striving to reduce the operating costs is an on
going exercise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1863.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1864
TO BE ANSWERED ON 14.03.2013

THORIUM AS SAFE AND CLEAR ENERGY SOURCE

1864. DR. T. SUBBARAMI REDDY

Will the PRIME MINISTER be pleased to state:

(a) whether scientists have now started to experiment the power of other radioactive element, thorium as safe and clear energy source;
(b) if so, whether according to them, the thorium based small nuclear reactors can make world, free from its dependency on coal and naturalgas;
(c) if so, the reaction of Government thereto and whether Government is contemplating to use it; and
(d) if so, the time as well as the manner it is likely to be done?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVAN CES & PENSIONS AND
PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)to(c)
Yes, sir. Thorium plays a pivotal role in Indian Nuclear power programme. In fact, right at the beginning, a 3-stage Indian nuclear power programme has been chalked out and use of Thorium as an energy source has been contemplated during the third stage. Right from the inception of Indian nuclear power programme, work has been carried out on various aspects of thorium utilisation- including mining and extraction of thorium, fuel fabrication, irradiation in reactors, reprocessing and refabrication. Internationally too, certain new designs have been proposed to use Thorium. The third stage of Indian nuclear power programme contemplates making use of Uranium-233 (obtained from irradiated thorium) to fuel Uranium-233 ï Thorium based reactors, which can provide energy independence to the country for several centuries. This will avoid the dependency on coal and natural gas.
(d) Thorium will be introduced on a large scale at an optimal point during operation of Fast Breeder Reactors in the second stage of Indian Nuclear Programme and it will become the mainstay for nuclear power generation in the third stage. The time of large scale thorium deployment is expected to be 3 - 4 decades after the commercial operation of Fast Breeder Reactors with short doubling time.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus1864.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. 324
TO BE ANSWERED ON 20.03.2013

INCREASE IN COST OF REACTORS

*324. SHRI JOSE K. MANI:
SHRI BASUDEB ACHARIA:

Will the PRIME MINISTER be pleased to state:

(a) whether India has concluded a formal deal for purchase of six Evolutionary Pressurised Reactors (EPR) from the French Company AREVA for Jaitapur Nuclear Power Plant (NPP) and if so, the details thereof;
(b) whether it is a fact that the company has increased the cost of EPR substantially and if so, the details thereof;
(c) whether this will lead to construction cost overrun of the Plant and if so, the details thereof along with the estimated cost of power to be generated by the Plant;
(d) whether it is also a fact that AREVA has not commissioned a single EPR in its ongoing projects anywhere in the world including Finland and France; and
(e) if so, the details thereof and the reasons forgoing in for such costly and non-tested EPRs from AREVA?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (e) A statement is laid on the Table of the House.

******

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. 324 FOR ANSWER ON 20.03.2013 BY SHRI JOSE K. MANI AND SHRI BASUDEB ACHARIA REGARDING INCREASE IN COST OF REACTORS .

(a) No, Sir.
(b)&(c) Do not arise.
(d) Yes, Sir.
(e) Currently four EPRs, two in China, one each in Finland and France are under different stages of construction. According to thereports in public domain, these reactors are slated for commissioning in next2 to 4 years. The reactors planned to be set up at Jaitapur by AREVA are of EPR design, which has been evolved based on the proven and tested design, safety principles and

manufacturing technologies employed in ôN4ô reactors in France and ôKONVOIô reactors in Germany which are successful and in saf
e operation for the last several years. The EPR design meets the International Atomic Energy Agency
(IAEA) safety requirements and has been certified by the regulatory authorities in several countries.

****

(http://dae.nic.in/writereaddata/parl/bud2013/lssq324.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3686
TO BE ANSWERED ON 20.03.2013

DISPOSAL OF NUCLEAR WASTE

3686. SHRI KIRTI AZAD:

Will the PRIME MINISTER be pleased to state:

(a) the manner/method of nuclear waste disposal in the country;
(b) whether private agencies are involved in this process; and
(c) if so, the criteria fixed for selecting these
agencies?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Management of radioactive waste in Indian context includes all types of radioactive wastes generated from the entire nuclear fuel cycle and also from installations using radionuclides in medicine, industry and research. In the choice of processes and technologies adopted utmost emphasis is given to waste minimisation and volume reduction. The comprehensive radioactive waste management operations are carried out fulfilling all prescribed regulatory requirements. Safe management of nuclear waste has been accorded a high priority right from the inception of our nuclear energy programme.Nuclear waste in gaseous, liquid and solid forms isgenerated during operation & maintenance activitiesof nuclear facilities. The processing technologies adopted for management of nuclear waste are summarised below:

(1) Gaseous waste is treated at the source of generation. The techniques used are adsorption on activated charcoal and filtration by high efficiency particulate air filter. The treated gases are then diluted with exhaust air and discharged through tall stack with monitoring.
(2) Liquid waste streams are treated by various techniques, such as filtration, adsorption, chemical treatment, evaporation, ion exchange, reverse osmosis etc. depending upon the nature, volume & radioactivity content. The emphasis is on volume reduction and the concentrate generated therefore is immobilised in inert materials like cement, etc.
(3) The radioactive solid waste generated during operation and maintenance of nuclear facilities are segregated and volume is reduced using various technologies like compaction and incineration. The solid/solidified waste is packaged in suitable containers to facilitate handling, transport and disposal. Disposal of waste is carried out in specially constructed structures such as stone lined trenches, reinforced concrete trenches and tile holes.

(4) India has adopted closed fuel cycle option, which involves reprocessing and recycling of the spent fuel. During reprocessing, only about two to three percent of the spent fuel becomes waste and the rest is recycled. This waste,called high level waste (HLW), is converted into glass through a process, called vitrification. The vitrified waste is stored in a Solid Storage Surveillance Facility for 30-40 years with natural cooling prior to its disposal in a deep geological repository. The needfor a deep geological repository will arise only after three to four decades.
(b) No, sir.
(c) Not applicable in view of (b) above.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3686.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3692
TO BE ANSWERED ON 20.03.2013

SHORTAGE OF URANIUM

3692. SHRI RAKESH SINGH:

Will the PRIME MINISTER be pleased to state:

(a) whether there is shortage of uranium for atomic power plants in the country;
(b) if so, the details thereof;
(c) whether our country is still dependent on othercountries for supply of uranium;
(d) if so, the details thereof;
(e) whether our country has any potential to become self-reliant in uranium; and
(f) if so, the details thereof and if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes Sir.
(b) Out of 19 operating Nuclear Power Reactors in the country with installed capacity of 4680 MW, ten nuclear power reactors with a capacity of 2840 MW are fuelled with Indigenous uranium, which is not available in the required quantity. The remaining 9 nuclear reactors with a capacity of 1840 MW are under International Atomic Energy Agency (IAEA) safeguards. These 9 reactors use imported uranium, which is available in required quantity.
(c) Yes Sir.
(d) The department has, so far, imported fuel from France, Russia and Kazakhsthan.
(e) Yes Sir.
(f) Geological considerations indicate that our country has the potential to host adequate in situresources of uranium in many parts. Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy, is actively engaged in establishing in-situresources of uranium and has, so far, established 1,86,653 t in situuranium (U3O8) resources in the country.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3692.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3696
TO BE ANSWERED ON 20.03.2013

RESEARCH IN NUCLEAR SCIENCE

3696. SHRI PARTAP SINGH BAJWA:

Will the PRIME MINISTER be pleased to state:

(a) the steps taken by the Government during the last three years to boost research in nuclear science in the country;
(b) whether there is any proposal to set up research reactors in future;
(c) if so, the details thereof; and
(d) the details of the nuclear science research programmes proposed in the 12thFive Year Plan?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The Department of Atomic Energy (DAE) has been pursuing R&D in nuclear science, engineering and advanced mathematics. The R&D activities are carried out through Research Centres, Aided Institutions under the administrative control of the Department and also through extra mural support through Board of Research in Nuclear Sciences (BRNS). The Department has formulated projects under the XII Five Year Plan with emphasis on Research in Nuclear Science. The outlay provided under XII Five Year Plan (2012-17) R&D Sector is ` 19,740 crore. During the last three years, the Department has provided adequate financial support under R&D Sector as detailed below, for pursuing research in nuclear science:

2010-11: ` 1817.07 crore (actual expenditure)
2011-12: ` 2512.63 crore (actual expenditure)
2012-13: ` 2940.90 crore (approved outlay)

Some of the other important steps taken by the Department towards boosting the research in nuclear sciences and allied disciplines
are the following:

i) Setting up of Global Centre for Nuclear Energy Partnership (GCNEP) in Haryana.ii) Participation of Indian scientists in international collaboration programmes such as Large Hadron Collider at CERN, International ThermoNuclear Experimental Reactor (ITER) Project/Jules Horowitz Reactor Project (France) etc.iii) Strengthening of Human Resources

and building expertise in the specialised areas of nuclear sciences through initiatives under Homi Bhabha National Institute (HBNI), a deemed University, setting up of National Institute of Science Education and Research (NISER), University of Mumbai-Department of Atomic Energy-Centre for Excellence in Basic Sciences (UM-DAE-CBS), collaborations of Research Centres /Aided Institutions of DAE with Universities in India and abroad; iv) Strengthening of R&D infrastructure by way of new project activities for establishing new BARC campus at Vizag, TIFR Centre for Interdisciplinary Sciences (TCIS) at Hyderabad and International Centre for Theoretical Sciences (ICTS), Bengaluru.v) Pursuing research in the Fast Breeder Reactor and fusion research programmes.

(b)&(c) Two research reactors are proposed to be constructed at the new BARC Campus at Vizag. One of the research reactors will be similarto existing 100 MW Dhruva research reactor. The other research reactor will be a 30 MWreactor specifically designed to produce high specific activity radioisotopes not presently produced in the country. (d) The Department has proposed a total of 400 projects with an outlay of `19740 crore under R&D Sector in XII Five Year Plan. Some significant initiatives are listed in the table below:

Department of Atomic Energy – Significant initiatives

	Significance of the programme	**Title**
1.	Flagship Programmes	High flux research reactor and Isotope processing laboratory
2.		2 125 MW Thermal research reactor
3.		Peta Flop class Parallel Supercomputing facility
4.		Sodium Technology Complex
5.		Advanced National facility for Unstable and Rare Isotope Beams
6.		India based Neutrino Observatory (INO)- a multi-institutional green field project of the Department of Atomic Energy to builda world class underground laboratory for high energy and nuclear physics research.
7.		Enhancement of INDUS synchrotron user facility
8.		Development of GCNEP - an initiative to enable India in establishing the leadership in the field of nuclear energy through research and training
9.		TI FR Hyderabad Campus - special focus on science education at all levels

		• Unification of traditional disciplines under research themes. • Convergence of fundamental and applied sciences, facilitating the emergence of new technologies. Å • Unification of teaching and research in ways that reinforce and elevate each other.
10.		Establishment of cancer hospital at Vizag
11.	Developing Human resources and fostering new opportunities in science education	NISER Campus
12.		Development of International Centre for Theoretical Sciences - TIFR Bengaluru • programs in science education and communication; • refresher courses for college and university teachers • open courseware to students and researchers • enthusing high school and college students by providing opportunities for interaction with renowned scientists
13.		

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3696.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3715
TO BE ANSWERED ON 20.03.2013

IMPORT OF URANIUM

3715. SHRI KALIKESH N.SINGH DEO:

Will the PRIME MINISTER be pleased to state:

(a) the details of rules prescribed for import of uranium into the country;
(b) whether the rules apply to uranium tainted substances and if so, the details thereof;
(c) whether the Government is aware of any privatecompany importing copper concentrates stained with uranium from Australia and if so, the details thereof;
(d) whether the Government has conducted any enquiry into this issue; and
(e) if so, the details of the findings and the action taken against the responsible parties?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Import of uranium or thorium ores and concentrates and radioactive chemical elements and radioactive isotopes (including the fi
ssile or fertile chemical elements and isotopes) and their compounds; mixtures and residues containing these products is restricted and requires authorisation from Directorate General of Foreign Trade and, further, are subject to the provisions of Atomic Energy Act, 1962 and rules made thereunder.
(c) No, Sir.
(d)&(e) Do not arise in view of (c) above.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3715.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3737
TO BE ANSWERED ON 20.03.2013

PERMISSION TO PRIVATE SECTOR FOR URANIUM MINING

3737. SHRI HANSRAJ G. AHIR:

Will the PRIME MINISTER be pleased to state:

(a) whether private sector companies in the country have sent a proposal to the Government for approval of Uranium mining;
(b) if so, the details of the proposals in this regard;
(c) whether the Government proposes to give permission for exploration and mining of Uranium on the line of NELP; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) No, Sir.
(b) Does not arise, in view of (a) above. (c) No, Sir. Uranium is a ñprescribed substanceò under the Atomic Energy Act 1962. Handling of ñprescribed substancesò has been regulated both under the ñAtomic Energy Act 1962ò, and the ñAtomic Energy (working of mines, minerals and handling of prescribed substances) Rules 1984ò, under which no person shall mine, mill, process and/or handle any ore mineral or other material from which any one or more of theprescribed substances can be extracted, without obtaining a licence from the licensing authority (appointed by Central Government). Further, the subject of ñAtomic Energyò has, since the inception of Indiaõs industrial policy in 1948, been always reserved for the exclusive domain of the Government; and hence only the Central Government and its Public Sector Undertakings (PSU) only are permitted for exploration, mining, processing etc. of Uranium. Further, the ñNew Exploration Licensing Policyò (NELP) was enunciated by Ministry of Petroleum and Natural Gas, and is applicable only for the Hydro-carbon sector in the country. Inview of the above, there is, at present, no proposal to give licence or permission to private sector companies for exploration and mining of Uranium in the country.
(d) Does not arise, in view of answer to (c) above.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3737.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3754
TO BE ANSWERED ON 20.03.2013

EXPORT OF NUCLEAR MINERALS

3754. SHRI RAJIV RANJAN SINGH ALIAS LALAN SINGH:
SHRI ANANTKUMAR HEGDE:

Will the PRIME MINISTER be pleased to state:

(a) whether certain changes had been made in the Atomic Energy Act through a notification on 18 January, 2006;
(b) if so, the details thereof;
(c) whether such changes are likely to lead to export of many atomic minerals from the country under open general licence;
(d) if so, the names of those minerals;
(e) whether the atomic energy sector of the country is likely to suffer financial loss by export of these minerals; and
(f) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) No Sir. The notification of 18 January 2006 issued under the Atomic Energy Act, 1962 pertain to Prescribed Substances, Prescribed Equipment and Technology. The items listed in the notification are regulated as per the provisions of the Atomic Energy Act, 1962.
(c)&(d) Separate license is required for acquisition, production, possession, use, disposal, export and import of any of the prescribed substances. The prescribed substances inter-alia includes uranium, thorium, any material, substance or concentrate containing uranium and thorium, and also niobium, tantalum and beryllium. These elements and their minerals are important for atomic energy programme and the changes as above donot bring these under open general licence for export.
(e) No Sir.
(f) Does not arise in view of (e) above.
*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3754.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3776
TO BE ANSWERED ON 20.03.2013

NUCLEAR POWER PLANTS

3776. SHRI SOMEN MITRA: KUMARI SAROJ PANDEY
SHRI SUVENDU ADHIKARI: SHRI JAYARAM PANGI:
SHRI HARISHCHANDRA CHAVAN: SHRI RAVNEET SINGH:
SHRI JAI PRAKASH AGARWAL:

Will the PRIME MINISTER be pleased to state:

(a) the number of Nuclear Power Plants (NPPs) functioning in the country along with their locations/State and installed capacity, plant-wise;
(b) the number of NPPs under construction along with location/State as well as power generation capacity and their present status, plant-wise;
(c) the number of NPPs proposed to be set up alongwith location/State as well as power generation capacity and their present status, plant-wise;
(d) whether the NPPs already functioning in the country are not generating power as per their installed capacity;
(e) if so, the reasons therefor along with the installed capacity and the actual power generation by each plant;
(f) the steps taken by the Government to ensure that power generation in these plants reaches the optimum level; and
(g) the funds allocated, released and spent for the under-construction and proposed to be constructed plants during each of the last three years and the current year?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)Nuclear power reactors in operation with installed capacity are as under:Unit
-

Location	Installed Capacity (MWe)
TAPS-1 Tarapur, Maharashtra	160
TAPS-2 Tarapur, Maharashtra	160
RAPS-1 Rawatbhata, Rajasthan *	100
RAPS-2 Rawatbhata, Rajasthan	200
MAPS-1 Kalpakkam, Tamilnadu	220
MAPS-2 Kalpakkam, Tamilnadu	220
NAPS-1 Narora, Uttar Pradesh	220

NAPS-2 Narora, Uttar Pradesh	220
KAPS-1 Kakrapar, Gujarat	220
KAPS-2 Kakrapar, Gujarat	220
KAIGA-2, Kaiga, Karnataka	220
RAPS-3 Rawatbhata, Rajasthan	220
KAIGA-1Kaiga, Karnataka	220
RAPS-4 Rawatbhata, Rajasthan	220
TAPS-4 Tarapur, Maharashtra	540
TAPS-3 Tarapur, Maharashtra	540
KAIGA -3 Kaiga, Karnataka	220
KAIGA -4 Kaiga, Karnataka	220
RAPS-5 Rawatbhata, Rajasthan	220
RAPS-6 Rawatbhata, Rajasthan	220
Total	**4780**

*RAPS-1 shutdown from 09.10.2004 for review of continuation of operation.

(b) The details of nuclear power plants under construction are as under:

Project	**Location**	**Capacity (MW)**	**Progress as of Feb 2013**	**Expected start of generation**
KK -1&2	Kudankulam, Tamilnadu	2X1000	97.32 %	Unit-1 May 2013 Unit-2 Dec 2013
KAPP 3&4	Kakrapar, Gujarat	2X700	34.0 %	2016-17
RAPP 7&8	Rawatbhata, Rajasthan	2X700	21.4%	2016-17
PFBR	Kalpakkam, Tamil Nadu	500	94%	2015

(d) The XII Five Year Plan proposals envisage start of work on 19 new nuclear power reactors inthe XII Five Year Plan. The details are:

Project	**Location**	**Reactor Type**	**Capacity (MW)**
Indigenous Reactors			
Gorakhpur 1&2	Gorakhpur, Haryana	PHWR	2X700
Chutka 1&2	Chutka, Madhya Pradesh	PHWR	2X700
Kaiga 5&6	Kaiga, Karnataka	PHWR	2X700
Mahi Banswara 1&2	Mahi Banswara,	PHWR	2X700

	Rajasthan		
FBR 1&2	Kalpakkam, Tamilnadu	FBR	2X500
AHWR	Site to be decided	AHWR	300
LWRs with International Cooperation			
Kudankulam 3&4	Kudankulam, Tamilnadu	LWR	2X1000
Jaitapur 1&2	Jaitapur, Maharashtra	LWR	2X1650
Chhaya Mithi Virdi 1&2	Chhaya Mithi Virdi, Gujarat	LWR	2X1100
Kovvada 1&2	Kovvada, Andhra Pradesh	LWR	2X1500

Pre-project activities, comprising of land acquisition at new sites (Gorakhpur, Chutka, Mahi Banswara, Chhaya Mithi Virdi and Kovvada), obtaining statutory clearances and preparation of project proposals are in progress and at variousstages at the above sites except at Kudankulam, where the pre-project activities have been completed and the project proposal is under consideration of the Government for accordof administrative approval and financial sanction.

(d)&(e) Out of 19 operating nuclear power reactors in the country with installed capacity of 4680 MW, ten nuclear power reactors with a capacity of 2840 MW namely Kaiga Generation Station Units 1 to 4 (4X220MW), Narora Atomic Power StationUnits 1&2 (2X220 MW), Madras Atomic Power Station Units 1&2 (2X220 MW) and Tarapur Atomic Power Station Units 3&4 (2X540 MW) are fuelled with indigenous uranium, which is not available in the required quantity. These are accordingly being operated at lower power levels matching the fuel supply. The remaining 9 nuclear reactors with a capacity of 1840 MW are under International Atomic Energy Agency (IAEA) safeguards in accordance with the separation plan. These 9 reactors use imported uranium, which is available in required quantity, and are operating at rated capacity. The details of installed capacity and generation in the year 2011-12 are given below:

Location & State	**UNITS**	**Capacity MW**	**2011-12**	
			Gen (MU)	**CF(%)**
Tarapur, Maharshtra	TAPS 1	160	1371	98
	TAPS 2	160	1337	95
	TAPS 3	540	4325	91
	TAPS 4	540	2781	59
Rawatbhata, Rajasthan	RAPS 1	100	0	0
	RAPS 2	200	1821	104
	RAPP 3	220	1938	100
	RAPS 4	220	1645	85
	RAPS 5	220	1974	102

	RAPS 6	220	1764	91
Kalpakkam, Tamilnadu	MAPS-1	220	1240	64
	MAPS-2	220	1276	66
Narora, Uttar Pradesh	NAPS-1	220	1047	54
	NAPS-2	220	937	48
Kakrapar, Gujarat	KAPS-1	220	1919	99
	KAPS-2	220	1868	97
Kaiga, Karnataka	KAIGA-1	220	1270	66
	KAIGA-2	220	1381	71
	KAIGA-3	220	1231	64
	KAIGA-4	220	1330	69

(f) The government has made efforts to augment indigenous uranium supply by accelerating exploration efforts, opening new mines and processing facilities.
(g) NPCIL has not drawn any domestic budgetary support since 2005-06. The details of funds allocated and spent during the last three years andcurrent year on under construction and proposed to be constructed projects in Rupees croreare as follows:

Project	2009-10		2010-11		2011-12		2012-13	
	BE	Exp.	BE	Exp.	BE	Exp.	BE	Exp. Upto Jan 2013
Projects under Construction								
Kaiga 3&4	18	133.45	233	139.40	-	-	-	-
RAPP 5&6	125	208.07	-	-	-	-	-	-
KK 1&2	855	1083.02	377	803.67	700	933.58	840	739.62
KAPP 3&4	400	150.08	344	352.89	1250	1077.38	1902	752.87
RAPP 7&8	200	166.49	103	287.71	700	545.73	1110	643.93
Projects Proposed								
KK 3&4	1	12.15	400	13.50	350	29.43	800	76.90
Gorakhpur 1&2	-	-	-	1.21	2	0.42	69	521.22
Chutka 1&2	-	-	-	1.05	2	0.5	5	0.8
Mahi Banswara 1&2	-	-	-	-	-	-	-	0.69
Kaiga 5&6	-	-	-	-	-	-	2	-
Jaitapur 1&2	30	4.11	105	9.40	250	18.12	250	18.71
Kovvada 1&2	-	-	200	4.56	100	1.94	15	2.68
Chhaya Mithi Virdi 1&2	-	-	200	4.21	125	2.84	5	1.18
Bhimpur 1&2	-	-	-	-	-	-	-	0.32
Haripur 1&2	-	-	-	0.35	3	0.29	3	0.33

Funds allotted, released and spent pertaining to BHAVINI for the last three years and current year for PFBR and FBR Units 1&2 are as follows:

₹ IN CRORES

Project	2009-10			2010-11			2011-12			2012-13		
	BE	Released	Exp.	BE	Released	Exp.	BE	Released	Exp.	BE	Released	Exp. (upto Jan 13)
PFBR	750	995.75	696.86	1275	330*	605.32	905	905*	31.33	600	174.67	386.22
FBR 1&2	-	-	-	125	15	1.24	50	-	1.10	100	-	2.83

*Note : * includes ₹ 30 crore equity from NPCIL during 2010-11 and 2011-12.*

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3776.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3780
TO BE ANSWERED ON 20.03.2013

REHABILITATION AND COMPENSATION PACKAGE

3780. SHRI HANSRAJ G. AHIR:
SHRI SAMEER BHUJBAL:

Will the PRIME MINISTER be pleased to state:

(a) the details of rehabilitation and compensationpackage already in place for the people affected by Jaitapur Nuclear Power Plant in Ratnagiri of Maharashtra;
(b) whether there is any request pending with the Government for enhancement of compensation package;
(c) if so, the details thereof and the action taken/proposed to be taken by the Government in this regard along with the funds provided to theState Government for the purpose;
(d) whether any decision has been taken to providecompensation for land acquired for setting up Atomic Energy Projects in other States also on the pattern of Jaitapur; and
(e) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) An agreement on comprehensive Rehabilitation Package for the Project Affected Persons of Jaitapur Atomic Power Project has been signed between Nuclear Power Corporation of India Limited (NPCIL) and the Government of Maharashtra on October 16, 2010. The rehabilitation package includes apart from compensation, rehabilitation grant, minimum life-time pension for deserted women, shelter less or destitute persons, provision of employment to one person fromeach project affected family or a lumpsum one time compensation in lieu of employment, training of locals to improve their skills, award of scholarship etc.
(b)&(c) In February 2013 Government of Maharashtra has announced additional compensation of ` 22.50 lakh per hectare of land acquired. Department of Atomic Energy has agreed, in principle, to release funds to the state government, accordingly.
(d) No, Sir.
(e) Does not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3780.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3793
TO BE ANSWERED ON 20.03.2013

OBSTACLES IN DEVELOPMENT OF ATOMIC ENERGY INDUSTRY

3793. SHRI ARJUN RAY:

Will the PRIME MINISTER be pleased to state:

(a) whether the Civil Liability for Nuclear DamageAct has been causing obstacles in the development of atomic energy industry in the country;
(b) if so, the names of the countries which have refused to take up joint ventures with India in the atomic energy sector due to the said obstacles;
(c) whether atomic energy industry is a sector having the possibilities of grave danger;
(d) if so, the reaction of the Government thereto;and
(e) whether the above Act is not adequate to take protective measures against the said dangers and if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a) The Civil Liability for Nuclear Damage Act, 2010 has not been causing obstacles in the development of atomic energy industry in the country;
(b) The said Act does not pose a hurdle to civil nuclear cooperation with other countries.
(c)&(d) No Sir. Stringent regulatory mechanisms and oversight procedures are in place to ensure safety of the nuclear power plants and other allied facilities and processes in the nuclear industry.
(e) The objective of the Civil Liability for Nuclear Damage Act, 2010 is to ensure availability of prompt compensation for the victimsin the unlikely event of a nuclear incident.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3793.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3813
TO BE ANSWERED ON 20.03.2013

IMPORT OF LIGHT WATER REACTORS

3813. SHRI SURESH ANGADI:

Will the PRIME MINISTER be pleased to state:

(a) whether a decision was taken in 2006 to import40,000 MW capacity light water reactors;
(b) if so, the details thereof;
(c) whether the Planning Commission has prepared an Integrated Energy Policy which sets 63,000 MW as the targeted nuclear power capacity for the year 2032 and these imports are part of them;
(d) if so, the details thereof;
(e) whether it is also a fact that no techno-economic evaluation was done to establish the real need for these imports; and
(f) if so, the details thereof and the reasons fornot having done such techno-economic evaluation?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a) No Sir.
(b) Does not arise.
(c)&(d) The projected nuclear power capacity of 63,000 MW by the year 2032 as envisaged in the Integrated Energy Policy was basedon capacity addition from a mix of indigenous as well as foreign technology based reactors.
(e)&(f) The techno-economic evaluation of the individual projects, ensuring highest safety standards and a viable tariff regime are a part of detailed negotiations currently at various stages.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3813.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3822
TO BE ANSWERED ON 20.03.2013

RESEARCH PROJECTS IN GUJARAT

3822. SHRI RAMSINH RATHWA:

Will the PRIME MINISTER be pleased to state:

(a) the research and development projects undertaken by the Bhabha Atomic Research Centre (BARC) during the last three years in Gujarat State;
(b) the amount of funds allocated in this regard;
(c) whether BARC has undertaken any research in the field of Agriculture in collaboration with various universities in the State, including Navsari Agriculture University; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) Research & Developmental activities pertaining to the activities of Department of Atomic Energy are being pursued in various universities / academic institutions in different states of the country by sponsoring R&D projects through the Board of Research in Nuclear Sciences (BRNS). As a part of this programme since 2005, 41 R&D projects were sponsored in the Gujarat State. Out of these, 16 projects were sponsored during the last three years. Besides R&D projects, BRNS also provides grant for conducting national / international seminars conferences across the country. In Gujarat State, in the last three years 21 conferences were provided grantby BRNS.
(b) For the BRNS sponsored R&D projects in Gujarat State, an amount of
`130 lakh was granted during the last three years.
(c)&(d) Studies on radiation based induced mutagenesis for crop improvements along with conventional breeding have been underway at BARC, Mumbai since several decades. Using both mutation and recombination breeding in groundnut, BARC has developed 14 groundnut varieties and are released and notified for commercial cultivation across the country. As a part of this, five varieties namely TAG 24, Somnath, TG 26, TG 37A and TPG 41 were released for Gujarat through active collaboration with Directorate of Groundnut Research (DGR), Indian Council of Agricultural Research (ICAR), Junagadh and Junagadh Agricultural University, Junagadh. Besides, recently released varieties like TG 38, TLG 45 and TG 51 (released elsewhere) are also popular among Gujarat farmers. New groundnut breeding lines of BARC having disease resistance are evaluated by Agricultural Research Station, Talod, Gujarat. Recently, Navsari Agricultural University, Navsari has undertaken evaluation of

advanced breeding lines of groundnut at four regional research stations. BARC through BRNS is also funding new projects of groundnut research like induced mutagenesis for stem rot resistance with Directorate of Groundnut Research, Junagadh. Further, BARC is actively collaborating with Agricultural Universities at Junagadh and Anand fordifferent objectives.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3822.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3868
TO BE ANSWERED ON 20.03.2013

DIVESTMENT IN NPC

3868. SHRIMATI SHRUTI CHOUDHRY:

Will the PRIME MINISTER be pleased to state:

(a) whether an amendment to the Atomic Energy Act
is a compulsory pre-requisite
for divestment in Nuclear Power Corporation; and
(b) if so, the details thereof and the steps taken
in this direction so far?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) No, Sir.
(b) Does not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3868.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3900
TO BE ANSWERED ON 20.03.2013

COMMENCEMENT OF KUDANKULAM NPP

3900. SHRI P.R. NATARAJAN:
SHRI M.I. SHANAVAS:

Will the PRIME MINISTER be pleased to state:

(a) the present status of the Kudankulam Nuclear Power Project and the funds utilized so far for its construction;
(b) whether the commercial operation of the project has been delayed further;
(c) if so, the reasons therefor;
(d) the time by which it is expected to be commissioned; and
(e) the main features of the project in terms of job opportunities, safety of the environment, livelihoods of the hamlet and nearby villages?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) At present various activities leading to approach to first criticality (start of fission chain reaction for the first time) in accordance with stage-wise clearances of the Atomic EnergyRegulatory Board (AERB) are in progress in Kudankulam Nuclear Power Plant (KKNPP) ï Unit-1. Commissioning activities are in progress in Unit-2. The expenditure on Kudankulam Project (KKNPP Units 1&2 - 2 X 1000 MW) till January 2013 has been `15,454 crore.

(b)to(d) In nuclear power plants, a series of activities including integrated system tests, first criticality, subsequent performance tests, synchronisation of the unit with the grid and raising of power in steps etc. in accordance with stage-wise clearances of the AERB are to be carried out after loading of fuel, before start of commercial operation. All efforts are being made to attain commissioning of the Unit-1 by May 2013, subject to regulatory concurrences at intermediate stages.

(e) The project has provided direct and indirect employment to several local people, apart from many business opportunities. The economic development in the area has been in harmony with the traditional means of livelihood ofthe people in the surrounding villages like fishing. The nuclear power reactors at Kudankulam employ several advanced safety features

to ensure protection of people and the environment even under most stressful situation like extreme naturalevents leading to loss of power and cooling water supply.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3900.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3902
TO BE ANSWERED ON 20.03.2013

ASSESSMENT OF ENVIRONMENTAL IMPACT

3902. SHRI SOMEN MITRA:

Will the PRIME MINISTER be pleased to state:

(a) whether the environmental impact of the nuclear power projects, proposed to be set up has been assessed and any plan formulated; (b) if so, the details thereof; (c) whether the environmental clearance has been obtained for these power projects; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)
:
(a)&(b) A nuclear power project proposed to be set up has to undergo a detailed assessment of the impact of the installation and operation of the plant on the environment by the Expert Appraisal Committee (EAC)of the Ministry of Environment and Forests (MoEF). The construction ofthe proposed nuclear power plant is started after the grant of environmental clearance of the project by the MoEF.
(c)&(d) Environmental clearance has been accorded for the Kudankulam Nuclear Power Project, Units 3&4 and Jaitapur Nuclear Power Project, Units 1&2, which are planned for start in the XII Five Year Plan. In respect of other projects planned for start in the XII Five Year Plan, the process ofobtaining environmental clearance is at various stages.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus3902.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 349
TO BE ANSWERED ON 21.03.2013

URANIUM RESERVES IN THE COUNTRY

*349 SHRI MAHENDRA SINGH MAHRA :

Will the PRIME MINISTER be pleased to state:

(a) the areas where uranium reserves are present in the country;
(b) whether the existing reserves are sufficient to run atomic power stations in the country;
(c) if not, the names of the countries from which Government proposes to import uranium;
(d) the other places where atomic power stations are proposed to be set up in the country; and
(e) the details of the steps taken for allaying the apprehensions of people of the country in view of problems encountered in the atomic power station of Japan?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (e) A statement is laid on the Table of the House.

******

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.349 FOR ANSWER ON 21.03.2013 BY SHRI MAHENDRA SINGH MAHRA REGARDING URANIUM RESERVES IN COUNTRY

(a) Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy, has so far established 1,86,653 t in-situuranium (U3O8) resources in the country. State-wise details of deposits identified are as given below:

State	Uranium resources (tonnes U3O8)
Andhra Pradesh	93,492
Jharkhand	54,768
Meghalaya	20,457
Rajasthan	7,244
Karnataka	4,682
Chhattisgarh	3,986
Uttar Pradesh	785
Uttarakhand	100
Himachal Pradesh	784

Maharashtra	355
Total	1,86,653

[1 tonne of U3O8 = 0.848 tonnes of uranium metal]

(b) The currently known reserves of indigenous uranium in the country is not sufficient to run atomic power stations in the country.
(c) The Central government is presently importing uranium from Russia and Kazakhsthan under long-term contracts.
(d) At present seven reactors are under construction, Rawatbhata in Rajasthan, Kalpakkam and Kudankulam in Tamil Nadu, and Kakrapar in Gujarat. In addition to this, the Central Government has accorded in-principle approval for sites for setting up of nuclear power plants at Jaitapur in Maharashtra, Kovvada in Andhra Pradesh, Chhaya-Mithi-Virdi in Gujarat, Gorakhpur in Haryana, Chutka and Bhimpur in Madhya Pradesh, Mahi Banswara in Rajasthan and Haripur in West Bengal, apart from locating additional units at the existing sites of Kundankulam and Kaiga.
(e) The ongoing public outreach programmes of Department of Atomic Energy have been enhanced following the Fukushima incident to allay the peopleôs apprehensions about the safety of nuclear power, radiation and other related aspects in a credible manner adopting a multi-pronged approach. The focus of the outreach have been the local community, decision-makers and peopleôs representatives, press and media, students and teachers, opinion-makers apart from the general public at large. The efforts include production of appropriate public awareness materials and their dissemination among all the target groups.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rssq349.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 357
TO BE ANSWERED ON 21.03.2013

SUPPLY OF EPR REACTOR

*357 SHRI D. RAJA :

Will the PRIME MINISTER be pleased to state:

(a) whether the issue of the supply of EPR reactorfor the proposed Jaitapur Nuclear Power plant was discussed with the French PresidentFrancois Hollande during his recent visit to India; and
(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) & (b) Yes Sir. As mentioned in the Joint Statement dated 14 February 2013 issued in regard to the State visit of the President of France to India, the status in regard to the first two EPR units was reviewed and it was noted that Nuclear Power Corporation of India Ltd. and AREVA were engaged in techno-commercial discussions. The Leaders expressed hope for the expeditious conclusion of the negotiations. It was also emphasized that the Nuclear Power Plant at Jaitapur would incorporate the highest safety standards.

******

(http://dae.nic.in/writereaddata/parl/bud2013/rssq357.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2636
TO BE ANSWERED ON 21.03.2013

ATOMIC ENERGY PLANT IN BIHAR

2636 DR. ANIL KUMAR SAHANI :

Will the PRIME MINISTER be pleased to state:

(a) whether Government has prepared a plan to esta
blish atomic energy plant in
Bihar; and
(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTERôS OFFICE (SHRI V. NARAYANASAMY) :

(a) There is no proposal to set up a nuclear power plant in Bihar under the currently formulated Plan projects.
(b) Does not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus2636.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2637
TO BE ANSWERED ON 21.03.2013

AVAILABLE URANIUM RESERVES IN MAHARASHTRA

2637 SHRI ISHWARLAL SHANKARLAL JAIN :

Will the PRIME MINISTER be pleased to state:

(a) whether uranium reserves are available in sufficient quantity for running nuclear power plants situated in Maharashtra;
(b) whether Government proposes to set up more newnuclear power plants in Maharashtra;
(c) if so, the details thereof; and
(d) by when the said nuclear power plants are likely to be set up?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Sufficiency and adequacy of uranium reserves torun nuclear power plants in the country is considered only at national level and not at individual state level. There are four units TAPS 1 to 4 with a total capacity of 1400 MW in operation at Tarapur in Maharashtra. TAPS 1&2 (2X160 MW) are under IAEA Safeguards and use imported fuel which is available in the required quantity and operate at rated power. TAPS 3&4 (2X540 MW) are fuelled by indigenous fuel which is not available in the required quantity.
(b) Yes, Sir.
(c) Six units of 1650 MW each are proposed to be set up at Jaitapur in Ratnagiri district of Maharashtra state in technical cooperation with France.
(d) These reactors are proposed to be set up in three phases of two units each, with a gap of four years between each phase. The work on the first phase comprising of 2 X 1650 MW is scheduled for commencement in the XII Five year Plan.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus2637.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2638
TO BE ANSWERED ON 21.03.2013

RESEARCH TO DEVELOP TITANIUM METAL

2638 Shri K.N. BALAGOPAL :

Will the PRIME MINISTER be pleased to state:

(a) whether Government has schemes of research to develop Titanium Metal in the country?
(b) if so, the details thereof; and
(c) whether, India is technologically capable of producing Titanium commercially; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes Sir.
(b)to(d) Research for development of Titanium Metalproduction technology in the country was initially carried out in Bhabha Atomic Research Centre, of Department of Atomic Energy. Based upon this technology, a pilot plant was set up in Nuclear Fuel Complex, Hyderabad (a unit of Department of Atomic Energy). This technology was subsequently transferred to Defence Metallurgical Research Laboratory (DMRL) of the Ministry of Defence, who operated a pilot plant with a production capacity of 2 tonnes of Titanium per batch. Based upon the same technology, Department of Space, in association with Kerala Minerals & Metals Ltd. (KMML), a Public Sector Undertaking of Government of Kerala, has now setup an industrial scale unit for production of titanium metal.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus2638.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 425
TO BE ANSWERED ON 25.04.2013

SAFETY MEASURES IN KUDANKULAM NUCLEAR PLANT

*425 SHRI T.M. SELVAGANAPATHI :

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that Kudankulam Nuclear Plant is in danger as inferior parts are being used;
(b) if so, the details thereof;
(c) whether it is also a fact that many experts have demanded for the safety test of the Plant; and
(d) if so, the details thereof and the steps takenby Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) No, Sir.
(b) Does not arise
(c)&(d) According to media reports certain individuals have sought investigation of safety of Kudankulam Nuclear Power Plant. In this regard, it may be mentioned that all components installed in Kudankulam NuclearPower Plant have been manufactured in line with prescribed requirements, and stage-wise verification as a part of a well-established quality assurance programme. Further, during the integrated system commissioning stage their performance is evaluated under process conditions and it is ensured that theperformance conforms to stipulated design requirements.

******

(http://dae.nic.in/writereaddata/parl/bud2013/rssq425.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3257
TO BE ANSWERED ON 25.04.2013

INSTALLATION OF THE DE-SALINATION PROJECT IN ODISHABY IREL

3257 SHRIMATI RENUBALA PRADHAN

Will the PRIME MINISTER be pleased to state:

(a) whether the Indian Rare Earths Limited (IREL) has decided to install the de-salination project at Gopalpur in Odisha to providedrinking water in its OSCOM unit near Gopalpur; (b) if so, the details of the project and its cost; and
(c) by when it will start to function?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) Yes, Sir. Indian Rare Earth Limited (IREL) has decided to install the desalination project at Gopalpur in Odisha to provide drinking water in its Orissa Sands Complex (OSCOM) unit near Gopalpur.
(b) Bhabha Atomic Research Centre (BARC) will set up a hybrid seawater desalination plant of 5 Million Litres per Day (MLD) capacity at an estimated cost of 112.90 crore comprising 4.5 MLD Sea Water Reverse Osmosis (SWRO) and 0.5 MLD Multi-Effect Distillation (MED) systems forproducing water for drinking as well as process purposes at Orissa Sands Complex(OSCOM), Indian Rare Earths Limited (IREL), Chatrapur, Ganjam District, Odisha. It is intended primarily for meeting the industrial and potable drinking water requirements for OSCOM unit of IREL. (c) The project has been sanctioned in March 2013.Scheduled completion date of the project is 31.03.2019.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3257.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3258
TO BE ANSWERED ON 25.04.2013

STEPS TO IMPROVE ENERGY GENERATION

3258 SHRI KIRANMAY NANDA :

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that energy generation and capacity utilization of our atomic plants is below world average Plant-wise;
(b) if so, the reasons thereof; and
(c) the steps proposed to be taken to improve our generation to match with world average?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) The capacity utilisation of nuclear power plants fuelled by imported uranium, which is available in the required quantity, is at par with the world average. The nuclear power plants fuelled by indigenous uranium have slightly lower capacity utilisation due to non-availability of required quantity of indigenous uranium. (c) The government has taken steps to augment supply of indigenous uranium by opening of new mines and processing facilities. This has led to improvement in capacity utilisation of reactors fuelled by indigenous uranium.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3258.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3259
TO BE ANSWERED ON 25.04.2013

THORIUM DEPOSITS IN MANAVALAKURICHI IN TAMIL NADU

3259 SHRIMATI GUNDU SUDHARANI :

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that Manavalakurichi in Southern Tamil Nadu is home to world's 30 per cent Thorium deposits;
(b) whether it is also a fact that 96 out of 111 licenses for mining garnet have been given to one company/person;
(c) whether it is also a fact that the Ministry has issued 44 licenses for mining ilmenite and all 44 have been given to one individual/firm;
(d) if so, the details thereof;
(e) the reasons for giving licences to one individual or firm; and
(f) the procedure followed in issuing each of the above licence?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir. Indian beach sands contain large reserves of monazite, a mineral containing thorium, in the world. The percentage of monazite,in the beach sands at Manavalakurichi in Tamil Nadu is high.
(b) No, Sir. As per the information furnished by the Government of Tamil Nadu, there are 81 mining leases granted for beach minerals in the State. Details of mining leases including garnet; lessee wise are given below:-

Name of the lessee	District	Total
Indian Rare Earths Ltd	Kanyakumari	03
	Madural	02
	Tirunelveli	27
	Kanyakumari	06
	Thoothukudi	01
Transworld's Garnet Pvt. Ltd.	Tirunelveli	14
	Thoothukudi 02	02
	Tirunelveli 09	09
	Thoothukudi 01	01
Tamil Nadu Minerals	Tirunelveli 01	01

M. Ramesh	Tirunelveli	01
K. Thangaraj	Tirunelveli	01
Southern Enterprises	Trichy	03
Indian Garnet Sand Company	Trichy	03
	Thoothukudi	01
S.S. Minerals	Trichy	01
Riverways Mines & Minerals	Trichy	01
Cauvery Garnet Pvt. Ltd.	Trichy	01
Nexus Corporate	Trichy	01
Industrial Mineral India Pvt. Ltd.	Thoothukudi	01
Maruthi Minerals	Trichy	01
	Total	**81**

(c)&(d) No, Sir. 42 Mining Leases, in which ilmenite is inc
luded, have been granted to various firms including Public Sector Undertakings of the Government of India. The details are given below:-

Name of the lessee	**District**	**Total**
Beach Minerals Sand Company Pvt. Ltd	Tirunelveli	02
	Thoothukudi	01
Beach Minerals Sand Company Pvt. Ltd.	Tirunelveli	07
V.V. Mineral	Tirunelveli	23
	Kanyakumari	04
	Thoothukudl	01
Indian Rare Earths Ltd.	Kanyakumari	03
Industrial Mineral Pvt. Ltd.	Thoothukudi	01
	Total	**42**

(e) Does not arise.
(f) State Governments are empowered to grant mineral concession for all minerals Iocated within the boundary of the State, under the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and Mineral Concession Rules, 1960. For minerals specified in the First Schedule to the MMDR Act, 1957, before granting the Mineral concession, approval of Central Govt. is necessary. The terms and conditions of Reconnaissance Permit (RP), Prospecting Licence (PL) and Mining Lease (ML) are prescribed under the MMDR Act and the Rules framed thereunder. Before allowing grant of RP/PL/ML, the State Governments ensure compliance of amended provisions of the Act and Rules and other applicable Acts and Rules including Forest (Conservation) Act, 1980 and Environmental Notification dated 27.01.1994 as issued and amended by Ministry of Environment and Forests.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3259.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3260
TO BE ANSWERED ON 25.04.2013

URANIUM RESERVES

3260 SHRI MAHENDRA SINGH MAHRA :

Will the PRIME MINISTER be pleased to state:

(a) whether Government proposes to acquire Uraniumreserves situated in other countries;
(b) if so, the names of countries where Uranium reserves are likely to be acquired;
(c) if not, whether Uranium reserves are being explored in the country itself for the supply of Uranium; and
(d) if so, the States where this work is being carried out?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Presently, no proposal for acquisition of Uranium reserves abroad is under consideration of the Government. (c)&(d) Survey and exploration activities are going on in the states of Andhra Pradesh, Rajasthan, Meghalaya, Karnataka, Arunachal Pradesh,Haryana, Tamil Nadu, Uttarakhand, Chattisgarh and Madhya Pradesh to identify additional reserves of Uranium in our country.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3260.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3261
TO BE ANSWERED ON 25.04.2013

CONSTRUCTION OF NUCLEAR POWER PLANTS IN RAJASTHAN

3261 SHRI ASHK ALI TAK :

Will the PRIME MINISTER be pleased to state:

(a) the places in Rajasthan where construction work of nuclear power plants is going on;
(b) the time by when their construction is likely to be completed; and
(c) the total amount to be spent on them along with the quantum of power to be generated from these power houses, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Construction of two nuclear power reactors, Rajasthan Atomic Power Project Units-7&8 (2X700 MW) is going on at Rawatbhata in Chittorgarh district of Rajasthan.
(b) The construction is scheduled to be completed in the year 2016-17.
(c) The approved cost of the project is `12,320 crore with its designed capacity of 1400 MW of power.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3261.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3262
TO BE ANSWERED ON 25.04.2013

NUCLEAR AND RADIATION SAFETY POLICY

3262 SHRI DEVENDER GOUD T:

Will the PRIME MINISTER be pleased to state:

(a) the reasons that due to which Atomic Energy Regulatory Board (AERB) has for so far not prepared nuclear and radiation safety policy in spite of getting the Board's approval in 1983; (b) the reasons for not developing 27 safety documents by AERB even after 25 years of its approval; (c) whether it is not a fact that the above lacunae have been pointed out by the CAG in its recent report; and (d) if so, action the Ministry has taken on them?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) In accordance with the Presidential orders dated 15 November 1983, constituting the AERB, the functions of AERB include, as per clause 2(i), development of safety policies in both radiation and industrial safety areas, and further,as per clause 2(vi), evolving major safety policies based on safety criteria, recommended by IAEA and other international bodies, adopted to suit Indian conditions. Accordingly, thesafety policies concerning the activities regulated by AERB are enshrined in the high level documents of AERB, namely The Atomic Energy (Radiation Protection) Rules, 2004, the mission statement and the various 'Codes' of AERB. These documents include the policies, principles and / or safety objectives that apply to the relevant activity/field and the specific regulatory requirements that are to be followed for fulfilling the same. The above principles and objectives form the broader policy of AERB for regulation of nuclear and radiation safety in the country. AERB did not feel the need for a single and separate 'Safety Policy' document, as these were well defined in the existing documents. AERB has agreed to the suggestion of Comptroller and AuditorGeneral of India, to the extent of consolidating the existing policy objectives and higher level principles as brought out in various codes and other documents into a separate 'Safety Policy' document. (b) to (d)Comptroller and Auditor General of India in the report on activities of AERB made an observation that AERB had not brought out 27 codes and guides relating to nuclear and radiation safety.AERB has already published 141 regulatory documents. AERB's approach with regard to prioritization for preparation of specific regulatory documents is a dynamic and ongoing process. The 27 balance documents are incorporated in the document development framework established by AERB in accordance with their assigned priorities.
(http://dae.nic.in/writereaddata/parl/bud2013/rsus3262.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3263
TO BE ANSWERED ON 25.04.2013

ALLOCATION OF POWER SUPPLY FROM KUDANKULAM NUCLEAR POWER PLANT

3263. SHRI C.M. RAMESH:
Will the PRIME MINISTER be pleased to state:
(a) whether it is a fact that power from Kudankulam has been allocated to various States;
(b) whether it is also a fact that not even a single MW has been allocated to Andhra Pradesh in spite of the fact that it is reeling under severe power shortage;
(c) whether it is also a fact that Government of Andhra Pradesh and also public representatives are demanding for allocation of 200 MW from Kudankulam to Andhra Pradesh; and
(d) if so, what action the Ministry has taken on s
uch request?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.
(b) Initially, tentatively Andhra Pradesh was allocated 530 MW power from Kudankulam Nuclear Power Project. However, APTRANSCO expressed unwillingness to take power from the project and thus power was re-distributed amongst other beneficiary States/Union Territory excluding Andhra Pradesh. (c)&(d) A request to allocate 300 MW unallocated power from Kudankulam Nuclear Power Project to Andhra Pradesh was received in July, 2012. Unallocated power of Southern Region including the unallocated power from Kudankulam is pooled and fully utilised by Southern Region. However, 100 MW power of NTPC stations of Eastern Region was allocated to Andhra Pradesh o
n 28.07.2012.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3263.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 502
TO BE ANSWERED ON 02.05.2013

POWER GENERATION FROM KUDANKULAM POWER PLANT

*502. SHRI DEVENDER GOUD T:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that Kudankulam is going to generate power from the next month; (b) if so, the details of the States to which power from Kudankulam would be allocated; (c) whether Andhra Pradesh has been requesting forallocating 300 MW from Kudankulam for, at least, one year; and (d) if so, the reasons for refusing to allocate toAndhra Pradesh at a time when it is reeling under a severe power crisis?

ANSWER THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) Yes, Sir. The first unit of Kudankulam project is expected to start operation this month, after receipt of stage-wise clearances from the Atomic Energy Regulatory Board (AERB).
(b) Government has allocated 2000 MW of power to be generated from Kudankulam Nuclear Power Plant Units 1&2 as given below:

State	Allocation (MW)
Tamil Nadu	925
Karnataka	442
Kerala	266
Puducherry	67
Unallocated	300

Based on a request from Chief Minister of Tamil Nadu, Ministry of Power has allocated additional 100 MW power to Tamil Nadu from the unallocated power.

(c)&(d)A request to allocate 300 MW unallocated power from Kudankulam Nuclear Power Project to Andhra Pradesh was received in July 2012. Unallocated power of Southern Region including the unallocated power from Kudankulam is pooled and fully utilised by Southern Region. However, based on request of Andhra Pradesh,100 MW power of NTPC stations of Eastern Region was allocated to them in July,2012..

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rssq502.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3877
TO BE ANSWERED ON 02.05.2013

SAFETY MEASURES FOR THE JAITAPUR NUCLEAR PLANT

3877. SHRI P. RAJEEVE:

Will the PRIME MINISTER be pleased to state:

(a) whether the reactors which will be used for Jaitapur atomic plant have been operationalised anywhere in the World;
(b) if so, the details thereof;
(c) if not, whether any safety measures have been ensured; and (d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a)&(b) The nuclear power reactors planned at Jaitapur site are Evolutionary Pressurised Water Reactors (EPRS). These have evolved from the proven design, safety principles and manufacturing technologies employed in 'N4' reactors in France and 'KONVOI' nuclear power reactors in Germany which are in safe operation for last several years. Currently, EPRs are under construction in Finland, France and China. These will be operational in 2 to 4 years and their operational feedback will also be available for reactors to be set up at Jaitapur. (c)&(d) The EPRs are Generation III+ reactors employing advanced safety features. Safety of the EPRs has been reviewed by the regulatory authorities in Finland, France and China where these reactors are in different stages of construction. The safety aspects of the reactors are reviewed andstage-wise clearances accorded by the Atomic Energy Regulatory Board (AERB) for every stage of implementation.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3877.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3878
TO BE ANSWERED ON 02.05.2013

SAFETY OF NUCLEAR ENERGY

3878. SHRI T.M. SELVAGANAPATHI

Will the PRIME MINISTER be pleased to state:
(a) whether there is a great need to enhance per capita consumption of nuclear energy in the country and the little use at present is mainlybecause of non-availability of this crucial energy;
(b) if so, the steps taken by the Government in this regard;
(c) whether the total share of nuclear energy in total energy stock is 3.8 percent;
(d) if so, whether Government has taken any action plan to improve the situation;
(e) whether one of the reason for low production ofthe nuclear energy in India is because of the fear attached to it; and
(f) if so, the steps taken by Government to convince all about the safety of nuclear energy?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :
(a) There is a need to increase the per capita consumption of electricity to spur economic growth in the country. Nuclear energy is a clean source of electricity generation which has huge potential and needs to be deployed in addition to other sources of electricity to meet growing demand of electricity in the country.
(b) The government has taken steps to augment nuclear energy generation by setting up nuclear power reactors based on indigenous technology & also with foreign technical cooperation.
(c) The share of nuclear energy in the total electricity generation in the country was about 3.6% in the year 2012-13.
(d) The low share of nuclear power is on account oflow installed capacity base, which is currently 4780 MW out of the total installed capacity of 223344 MW in the country. The present nuclear power installed capacity will reachto 10,080 MW by 2017 on progressive completion of projects under construction. The XII Five Year Plan proposals envisage start of work on new projects totaling to 17400 MW capacity. More nuclear power plants are planned to increase the nuclear power capacity in future. (e)&(f)The Fukushima accident in Japan led to apprehensions about safety of nuclear power in some sections of the people. A massive public outreach programme has been undertaken, adopting a multi-pronged approach, to reach out to all sections of the society and allay the apprehensions about the safety of nuclear power and all related issues in a credible manner.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3878.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3879
TO BE ANSWERED ON 02.05.2013

SAFETY MEASURES IN KUDANKULAM NUCLEAR POWER PLANT

3879. SHRI T.K. RANGARAJAN

Will the PRIME MINISTER be pleased to state:

(a) the additional safety measures incorporated in Kudankulam Nuclear Power Plant;
(b) the contribution of Indian Engineers for such safety;
(c) whether there is any proposal to allot the entire power produced by Project Ito power starving Tamil Nadu; and
(d) the cost of per unit power produced?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTERõS OFFICE (SHRI V. NARAYANASAMY)

(a)&(b) Several additional safety features have been incorporated in the Kudankulam reactors over the features in standard VVER 1000 reactors of second generation in operation after in-depth review by Indian engineers, both from the utility (Nuclear Power Corporation of India Limited) and the regulatory authority (Atomic Energy Regulatory Board). Some of the important additionalfeatures in Kudankulam reactors over earlier VVER 1000s are
(i) Four safety trains instead of three
(ii) Passive Heat Removal System
(iii) Passive core flooding system
(iv) Core Catcher
(v) Passive Hydrogen Recombiners
(vi) Double Containment
(vii) Four Emergency Diesel Generators instead ofthree
(viii) Larger number of reactor control rods
(c) No, Sir.
(d) The tariff of electricity from Kudankulam Units 1&2 is yet to be notified.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3879.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3880
TO BE ANSWERED ON 02.05.2013

FUNDS FOR WELFARE OF THE PEOPLE AROUND KUDANKULAM

3880. Dr. V. MAITREYAN :

Will the PRIME MINISTER be pleased to state:

(a) whether the Nuclear Power Corporation of India Limited (NPCIL) or Union Government have allocated funds or monetary packageto carry out the welfare of the people around Kudankulam; (b) if so, the details thereof and the amount allocated so far; (c) whether the funds allocated thus will be handed over to State Government of Tamil Nadu or will it be executed by any independent agency of NPCIL; and
(d) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.
(b) Nuclear Power Corporation of India Limited (NPCIL) has made an allocation of `200 crore for neighbourhood development around Kudankulam. Government of India has also accorded approval for allocation of `300 crore for providing housing for ten thousand families as part of Neighbourhood Development Programme in and around Kudankulam Nuclear Power Project.
(c) The projects are being implemented by the TamilNadu government and the funds for the same would be released to the Tamil Nadu government progressively in accordance with the progress.
(d) So far, a sum of `
45 crore has been released to the Tamil Nadu government in this regard.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3880.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3881
TO BE ANSWERED ON 02.05.2013

DEAL TO PRODUCE RARE EARTHS

3881 DR. CHANDAN MITRA

Will the PRIME MINISTER be pleased to state:

(a) Whether Indian Rare Earths Ltd. (IREL) has signed a deal to produce rare earths like Lanthanium, Cerium and Neodymium for Japan; (b) if so, the details thereof; (c) the steps taken by Government to have a regulatory mechanism to take care of the strategically important natural resources like Monazite and Ilmenite; and (d) the further steps taken by Government to check plundering of country's Thorium rich Monazite which is going on for decades?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b) No, Sir. No deal has been signed by Indian Rare Earths Ltd. (IREL) to produce rare earths like Lanthanum, cerium and Neodymium for Japan. However, a Memorandum of Understanding on co-operation in rare earths has been signed on 16.11.2012 between Department ofAtomic Energy and Ministry of Economy, Trade and Industry (METI) of Japan.
(c) Ilmenite, one of the beach sand mineral, has been delisted from the list of óPrescribed Substancesô under the Atomic Energy Act, 1962 from 01.01.2007 vide Notification No. S.O.61 (E) dated 20.01.2006. However, monazite continues to be a óPrescribed Substanceô under the Atomic Energy Act. Till date no licence has been issued to any private entity for production of monazite, its downstream processing for extracting thorium, and their export. Indian Rare Earths Ltd. (IREL) a Public Sector Undertaking under the Department of Atomic Energy, is the only entity which has been permitted to produce monazite, process it to extract thorium andhandle it for domestic as well as for export purpose.
(d) The Department has initiated steps to put in place comprehensive systems to check illegal mining/exporting of country's Thoriumrich Monazite. Prescribed regulatory inspections of beach sand mining facilities are being carried out by Atomic Energy Regulatory Board. The Central Board of Customs and Excise has also been requested for monitoring of radioactivity at ports and testing of Beach Sand Minerals export consignments.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3881.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.3882
TO BE ANSWERED ON 02.05.2013

SAFETY OF NUCLEAR POWER PLANT

3882 SHRI N. BALAGANGA:

Will the PRIME MINISTER be pleased to state:

(a) whether Government has made any assessment about the safety of the nuclear plants in the country; (b) if so, the details thereof; (c) whether the safety parameters in India are at par with the standards set by the IAEA; (d) if so, the details thereof and if not, the reasons therefor; and (e) the steps taken by Government to ensure safety of the nuclear power plants?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) & (b) The safety reviews of the Indian nuclearpower plants (NPPs) are carried out by the regulatory authority, the Atomic Energy Regulatory Board (AERB). All nuclear power projects undergo an elaborate in-depth safety review during the consenting stages, viz. siting, construction, commissioning, etc. After satisfactory review during project stage, AERB issues operating licence to an NPP for a period of up to five years. During the licence period, safety performance of an operational NPP is continuously monitored in compliance with regulatory guidelines. A consolidated safety assessment of the plant is undertaken while renewing the operating licence. Inaddition, the NPPs have an established programme of operating experience feedback.
(c) & (d) The safety system of nuclear power plantsis established and enforced in India with Safety Codes, Safety Guides, Safety Manuals and Technical Documents developed by the AERB, which are preparedin line with the IAEA Safety Documents. The safety standards followed in India in respect of NPPs are consistent with global best practices.
(e) All the NPPs in India are under continuous regulatory surveillance by AERB. In addition to the prescribed safety review assessments, comprehensive safety audits of all Indian NPPs against external events were undertaken by AERB and the Nuclear Power Corporation of India Ltd. following the Fukushima accident. The Operational Safety Review Team of IAEA reviewed RAPS Units 3 & 4 in 2012 at the invitation of the Government.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/rsus3882.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO.599
TO BE ANSWERED ON 08.05.2013

SAFETY REVIEW BY IAEA

*599. SHRI RAMSINH RATHWA:

Will the PRIME MINISTER be pleased to state:

(a) whether a safety review of the atomic power stations has been done recently by the International Atomic Energy Agency (IAEA) or by any other agencies; (b) if so, the details thereof and the steps proposed by the Government to address the concerns expressed during such review;(c) whether the Government proposes to conduct periodic safety review of all the atomic power stations in the country; and (d) if so, the details thereof and the timeframe fixed for the purpose, plant-wise?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) Yes, Sir.
(b) The safety review of Rajasthan Atomic Power Station (RAPS) Units 3&4 at Rawatbhata in Rajasthan was carried out by the Operational Safety Review Team (OSART) of the International Atomic Energy Agency (IAEA) at the invitation of the Government of India during October 29 to November 14, 2012. The OSART identified a series of good practices at the station, to be shared by IAEA with the global nuclear industry as well as made some suggestions which were noted for implementation. (c)&(d) The periodic safety reviews of the Indian nuclear power plants are already carried out by the regulatory authority, the AtomicEnergy Regulatory Board (AERB). In addition, international peer reviews are also carried out by experts of World Association of Nuclear Operators (WANO).

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lssq599.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6744
TO BE ANSWERED ON 08.05.2013

CIVIL NUCLEAR COOPERATION WITH FRANCE

6744. SHRI DUSHYANT SINGH:

Will the PRIME MINISTER be pleased to state:

(a) the present status of the Inter- Governmental agreement for Civil Nuclear Cooperation signed between India and France;
(b) the total share of India in this deal in termsof investment; and
(c) the manner in which these payments are to be made to the French Government?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) The 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 30.09.2008 and it entered into effect on 14.01.2010.
(b) & (c) A Memorandum of Understanding was signedon February 4, 2009 between the Nuclear Power Corporation of India Limited (NPCIL) and the French company AREVA for implementation of 1650 MWe EPR Units at Jaitapur site. NPCIL and AREVA are still engaged in techno-commercial discussions in regard to the Jaitapur Nuclear Power Project (2 X 1650 MWe EPR units).
*****
(http://dae.nic.in/writereaddata/parl/bud2013/lsus6744.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6693
TO BE ANSWERED ON 08.05.2013

HIGH VALUE URANIUM RESERVES

6693. SHRI SYED SHAHNAWAZ HUSSAIN:

Will the PRIME MINISTER be pleased to state:

(a) whether the Uranium Corporation of India (UCI)has explored high value uranium reserves in various parts of the country;
(b) if so, the details thereof;
(c) the amount spent by the UCI on exploration andother works during the last three years;
(d) the State-wise details of such exploration; and
(e) the revenue likely to be earned therefrom?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) No Sir. Uranium Corporation of India Ltd. (UCIL) does not carry out any activities for exploration of uranium reserves. (b) Does not arise. (c) The amount spent by UCIL under its projects for various works for the last three years are as follows:

F.Y. 2010-11 - ` 59085.50 lakh
F.Y. 2011-12 - ` 62163.61 lakh
F.Y. 2012-13 - ` 74489.00 lakh (unaudited)

(d)&(e) Do not arise.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6693.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6676
TO BE ANSWERED ON 08.05.2013

NEUTRINO OBSERVATORY

6676. SHRI P.T. THOMAS:

Will the PRIME MINISTER be pleased to state the present status of the India based Neutrino Observatory (INO) project along with the time by which the project is likely to be completed?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

The Atomic Energy Commission has approved an XI Five Year Plan Project titled ódevelopment of site infrastructure and prototype for India based Neutrino Observatoryôat an estimated cost of `66.31 crore. Under this Project, as part of pre-project activities the following activities have been taken up: a) 26.825 Ha. of land for establishing the Project has been acquired at Pottipuram Village, Theni District, Tamil Nadu and 12.155 Ha. of land for establishing the National Centre for High Energy Physics (NCHEP) has been acquired at Madurai, Tamil Nadu. b) Clearances from Ministry of Environment & Forests, Govt. of India and also from Department of Environment & Forests, Govt. of Tamil Nadu have been obtained for the above Project. c) Work of development of infrastructural facilities for the Project has been initiated by entering into a Memorandum of Understanding with Tamil Nadu Water Supply and Drainage Board (TWAD) for supply of water to the Project site and with the Highways Department, Govt. of Tamil Nadu for laying / widening the approach road to the project site. d) The detailed project report on the mega project on India based Neutrino Observatory, with an estimated cost of ` 1500 crore, is under examination and the project is yet to be approved. As per thisproject report, the scheduled time of completion of the project is seven years from the date of approval of the Project.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6676.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6738
TO BE ANSWERED ON 08.05.2013

NUCLEAR LIABILITY ACT

6738. SHRI ARJUN MEGHWAL:

Will the PRIME MINISTER be pleased to state:

(a) whether the US-India Business Council (USIBC) has submitted any memorandum to the Government to eliminate the concerns regarding the Civil Liability for Nuclear Damage Act, 2010 and the rules framed thereunder;
(b) if so, the details thereof; and
(c) the steps taken by the Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) The US-India Business Council is an "advocacy" organisation of the industry. It is learnt from media reports that, in a pre-budget memorandum this year, the US-India Business Council stated that India needed to address the issue of nuclear liability.
(c) Discussions of a clarificatory nature in regard to the Civil Liability for Nuclear Damage Act, 2010 and the rules thereunder have beenheld with the US side

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lssq6738.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6869
TO BE ANSWERED ON 08.05.2013

AGITATION AGAINST KUDANKULAM

6869. SHRI SYED SHAHNAWAZ HUSSAIN:

Will the PRIME MINISTER be pleased to state:

(a) whether there have been allegations that the civil society groups have misutilised the funds received from USA and other western countries to provoke agitations against Kudankulam nuclear plant;
(b) if so, the details thereof;
(c) whether any inquiry has been done in this rega
rd; and if so, the details thereof;
(d) the time by which the plant is likely to be made functional?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)to(c) Reports have been received regarding foreign funding of the NGOs protesting against the project at Kudankulam. Inspection of accounts and records in respect of 15 NGOs was carried out to ascertain whether provisions of Foreign Contribution Regulation Act (FCRA) 2010 have been contravened. On the basis of inspection, cases of two NGOs namely Tuticorin Diocese association and Rural Upliftment Centre, Nagercoil have been referred to CBI. Cases of five associations i.e. (i) Good Vision, Kanyakumari,(ii) Trust for Rural Upliftment and Education, Tirunvelveli, (iii) Aid India, Chennai (iv) SACCER, Nagercoil and (v) Centre for Promotion of social Concern, Tamil Nadu have been referred to State Police (CID) Crime Branch, Tamil Nadu. Bank accounts of these seven associations have also been frozen and they have been prohibited from receiving foreign contribution. Recently, the FCRA Registration of East Coast Research & Development Trust, Tamil Nadu has been cancelled. The FCRA Registrations of Associations viz. (1) Centre for Promotion of Social Concerns, Tamil Nadu (2) Rural Upliftment Centre, Tamil Nadu and (3) Good Vision, Kanyakumari, Tamil Nadu have been suspended for further 180 days.
(d) The first unit of Kudankulam project is expected to start operation this month, subject to receipt of stage-wise clearances from the Atomic Energy Regulatory Board (AERB).

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6869.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6867
TO BE ANSWERED ON 08.05.2013

SUPPLY OF SUB-STANDARD MATERIAL TO KNPP

6867. SHRI E.G. SUGAVANAM:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government is aware of the report
that sub-standard material was supplied to the Kudankulam Nuclear Power Project (KNPP) which has raised security concerns about the project;
(b) if so, the details thereof;
(c) whether the Government has taken any steps to address such safety concerns;
(d) if so, the details thereof; and
(e) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) Yes Sir, Certain reports have appeared in the media alleging that substandard material was supplied to the KudankulamNuclear Power Project (KKNPP). (c) to (e)The supplies of components and equipments to Kudankulam project were made after ascertaining requisite quality by the prescribed quality checks and Quality Assurance Programme. These are further tested in an integrated manner during commissioning to verify their performance in accordance to design performance criteria. Any short fall noticed in performance is addressed/corrected as a part of thecommissioning programme, followed by an in-depth review by the regulatory body, Atomic Energy Regulatory Board (AERB). At every stage of project, thorough review by AERB is made to ensure that prescribed standards of safety are met before according stage-wise clearances. Thus, there need not be any concern about safety of the project on this account. In order to convey the facts of the matter to the media and the public at large Press releases by Nuclear Power Corporation of India Limited (NPCIL) and AERB have been issued recently.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6867.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6846
TO BE ANSWERED ON 08.05.2013

QUALITY OF NUCLEAR EQUIPMENTS

6846. SHRI NEERAJ SHEKHAR:
SHRI YASHVIR SINGH:

Will the PRIME MINISTER be pleased to state:

(a) whether adequate mechanism is available for ensuring the quality of nuclear equipments and other items supplied by nuclear suppliers; (b) if so, the reasons therefor; (c) the details of the provisions incorporated under the Nuclear Liability Act,2010 for the same; (d) whether the Government proposes to amend the Act to ensure supply of quality nuclear items by nuclear suppliers; and (e) if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) Yes, Sir. There is an elaborate Quality Assurance Mechanism in place to ensure the quality of equipment supplied.
(c) As per the section 17 of the Civil Liability for Nuclear Damage Act, 2010, the operator of the nuclear installation, after paying the compensation for nuclear damage in accordance with section 6, shall have right of recourse where:- (i) such right is expressly provided for in the contract in writing; (ii) the nuclear incident has resulted as a consequence of an act of supplier or his employee, which includes supply of equipment or material with patent or latent defects or substandard services; (iii) the nuclear incident has resulted from the act of commission or omission of an individual done with the intent to cause nuclear damage.
(d) No, Sir.
(e) Covered under reply to (a)&(b) and (c) above.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6846.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6844
TO BE ANSWERED ON 08.05.2013

MALFUNCTIONING OF VALVES OF KUDANKULAM NUCLEAR PLANT

6844. DR. RATNA DE (NAG):
DR. P. VENUGOPAL:
SHRI S.R. JEYADURAI:
SHRI M.I. SHANAVAS:
SHRI SUGUMAR K.:
SHRI C. RAJENDRAN:
SHRI K.P. DHANAPALAN:

Will the PRIME MINISTER be pleased to state:

(a) whether four valves of the Kudankulam Atomic Power Plant were found to be defective during the tests done by the Atomic Energy Regulatory Board (AERB); (b) if so, the details thereof and the reasons therefor; (c) whether operationalisation of the plant has further been delayed as a result thereof and if so, the details thereof; (d) whether the system of quality checks, testing and reviews specified and enforced by AERB has the necessary depth to detect and correct deviations in quality; and (e) if so, the number of tests conducted by AERB till date and the number of defects or shortcomings that have been noticed by AERB since commencement of the construction of the Kudankulam Atomic Power Plant?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) Yes Sir.
(b) As a part of commissioning tests of Kudankulam Nuclear Power Plant Unit-1 (KKNPP-1) carried out by Nuclear Power Corporation of India Ltd. (NPCIL), the performance of 4 valves of a particular type was found to be deficient during testing of several thousands of equipments installed in thePlant.
(c) Apart from rectification of the said four valves, there are a number of stipulated checks/commissioning tests that were required to becarried out by NPCIL and reviewed by AERB before clearance for the subsequent stages were accorded. These jobs and reviews are in progress.
(d)&(e) Yes Sir, multi-level checks by NPCIL as well as AERB are in place for ensuring conformance with the quality requirements to ensurethat all the systems perform as per the design intent. During the construction stage of all nuclear power plants, AERB conducts periodic regulatory inspections and during these inspections various observations are made

and these are followed-up fortheir resolution. During commissioning, NPCIL submits its proposed test procedures, and after tests submits the corresponding test reports for review by AERB. As a part of this process, till date, approximately 150 test procedures and 500 test reports have been reviewed by AERB for KKNPP-1.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6844.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6823
TO BE ANSWERED ON 08.05.2013

SAFETY INSPECTIONS BY AERB

6823. SHRI BHISMA SHANKER ALIAS KUSHAL TIWARI:

Will the PRIME MINISTER be pleased to state:

(a) whether the private clinics using MRI, Ultrasound, X-ray machines, etc. have to get themselves registered with the Atomic Energy Regulatory Board (AERB);

(b) if so, the details thereof;

(c) the details of the agencies and institutions registered with the AERB and the benefits received by them;

(d) whether review/inspection of such agencies/institutions is conducted to ascertain compliance by such agencies/ institutions of safety norms and other rules determined by the AERB; and

(e) if so, the details of the inspections carried out during each of the last three years and the current year, State-wise?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a) The medical X-ray equipment of private clinics, being ionizing radiation generating units, are required to be licenced/registered with the Atomic Energy Regulatory Board (AERB). MRI and Ultrasound units are not emitting ionizing radiation and are therefore not required to be registered with AERB.

(b) Licence/registration of medical diagnostic X-ray equipment is issued by AERB after verifying compliance requirements such as availability of Site and Layout Approval, Qualified Personnel, Type Approval of X-ray equipment and other safety specific requirements as per AERB Safety Code for Medical Diagnostic X-ray Equipment and Installations.

(c) There are several stake holders in the field of diagnostic radiology. AERB issues Type Approval certificate in regard to design safety to manufacturers and suppliers.
The utilities licenced/registered by AERB purchaseonly the Type Approved equipment and comply with other requirements as prescribed in the Safety Code for Medical Diagnostic X-ray Equipment and Installations. The process ensures adequate safety from radiation for the users during the operation of the equipment.
(d) In respect of the manufacturers and suppliers the Type Approval process ensures that safety is built into the design of theequipment. As regards the utilities, review of applications submitted by themis carried out by AERB to ascertain compliance with the Atomic Energy (Radiation Protection) Rules, 2004 for ensuring radiation safety in the diagnostic facilities. In view of the low hazard potential, regulatory inspections are carried out on sample basis. (e) The number of inspections carried out in diagnostic X-ray facilities during the last three years and in the current year (includingby the Directorates of Radiation Safety in the States of Kerala and Mizoram) are given below:

State	No. of equipments inspected			
	2010	2011	2012	2013
Delhi	27	-	-	-
Kerala	204	336	255	100
Maharashtra	06	178 -	53	-
Meghalaya	01	-	-	-
Rajasthan	29	13	-	-
Tamil Nadu	74	18	63	17
Uttar Pradesh	15	-	05	-
Assam	27	-	-	-
Goa	-	09	-	-
Karnataka	-	31	38	25
Madhya Pradesh	-	34	11	-
Tripura	-	02	-	-
West Bengal	-	06	24	-
Chhattisgarh	-	-	18	-
Gujarat	-	-	68	-
Mizoram	- -	-	26	-
Odisha	-	-	02	-
Andhra Pradesh	-	-	-	17

****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6823.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6762
TO BE ANSWERED ON 08.05.2013

SUBSIDY/FINANCIAL ASSISTANCE FOR RESEARCH

6762. SHRI GOPINATH MUNDE:
SHRI HANSRAJ G. AHIR:
SHRI JEETENDRA SINGH BUNDELA:

Will the PRIME MINISTER be pleased to state:

(a) whether any subsidy or financial assistance isbeing provided by the Government for conducting research on the technique and technology required for construction of Thorium based energy projects; and
(b) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) Entire programme for conducting research for the technique and technology required for construction of Thorium based energy projects is being carried out by the Department of Atomic Energy in-house and no subsidy is being provided to any agency.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6762.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.6786
TO BE ANSWERED ON 08.05.2013

RESERVATION POLICY

6786. SHRI THIRUMAAVALAVAN:

Will the PRIME MINISTER be pleased to state:

(a) whether reservation policy is not being followed in the Atomic Minerals Directorate for Exploration and Research; (b) if so, the reaction of the Government in this regard; and (c) the action taken/being taken by the Governmentto ensure that the reservation policy is followed in the above Directorate strictly?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) Reservation policy is followed in the Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy.
(c) Liaison officers are appointed who monitor periodically the implementation of the reservation policy. Necessary roasters are maintained which are periodically verified and certified by the Liaison officers. Periodic meetings are held with the representatives of the SC employees association and all the issues settled appropriately.

*****

(http://dae.nic.in/writereaddata/parl/bud2013/lsus6786.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. 44
TO BE ANSWERED ON 07.08.2013

URANIUM RESOURCES

*44. SHRI NISHIKANT DUBEY:
SHRIMATI USHA VERMA:

Will the PRIME MINISTER be pleased to state:

(a) the requirement of nuclear fuel/uranium for the atomic power plants being run and under construction in the country;
(b) whether India is self-reliant in nuclear fuel/uranium resources;
(c) if so, the details thereof along with the details of uranium reserves found in the country during the last three years and the current year; location and State-wise;
(d) the efforts being made to explore new uranium mines in the country, Statewise; and
(e) the steps taken/being taken by the Government to acquire uranium mines in other countries with a view to ensuring continuous supply of uranium to nuclear reactors in the country?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY)

(a) to (e) A statement is laid on the Table of the House.
(b)

*****

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO.44 DUE FOR ANSWER ON 07.08.2013 BY SHRI NISHIKANT DUBEY AND SHRIMATI USHA VERMA REGARDING URANIUM RESOURCES

(a) The appropriate requirements of nuclear fuel/ uranium for Pressurised Heavy Water Reactors are as given below:

Unit Capacity (MW)	**Annual Fuel Requirement at 85% Capacity Factor (tonnes UO2)**
220	45
540	100
700	125

The appropriate requirements of low enriched uranium for Light Water Reactors are as

given below:

Unit Capacity (MW)	Annual Fuel Requirement at 85% Capacity Factor (tonnes low enriched uranium)
160	6
1000	27

(b) No sir. The currently known reserves of indigenous uranium in the country are not sufficient in terms of fuel supply to run atomic power stations in the country.
(c) The details of in situ U3O8 reserves established by Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit under the Department of Atomic Energy during the last three financial years and current financial year are as given under:
U3O8 in tones

State	2010-11	2011-12	2012-13	2013-14 (As on May 2013)
RAJASTHAN	996	55	518	----
MEGHALAYA	1326	1160	719	----
ANDHRA PRADESH	20306	6650	9479	4291
JHARKHAND	----	3169	4571	---

(d) AMD is engaged for establishing uranium resources in the country. Surveys by AMD includes heliborne geophysical surveys and AMD continues its efforts to locate additional resources of uranium by conducting such surveys in order to locate new uranium reserves in the country.
Major areas which are currently under survey and exploration to augment uranium reserves in India include:
a. Tummalapalle-Rachakuntapalle, Kadappa district, Andhra Pradesh
b. Koppunuru and adjoining areas, Guntur district, Andhra Pradesh
c. Rohil and adjoining areas, Sikar district, Rajasthan
d. Wahkut and Umthongkut areas of West Khasi Hills district, Meghalaya
e. Gogi, Yadgir district, Karnataka
f. Singridungri-Banadungri, East Singhbhum district, Jharkhand and
g. Bangurdih, Seraikela-Kharsawan district, Jharkhand.
(e) No specific proposals in this regard are under consideration in the Department.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lssq44.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.469
TO BE ANSWERED ON 07.08.2013

NUCLEAR SPENT FUEL

469. SHRI KALIKESH N. SINGH DEO:

Will the PRIME MINISTER be pleased to state:

(a) the amount of spent fuel generated in the country from nuclear power generation;
(b) the manner in which the spent fuel is being utilised and the quantum being reprocessed and disposed of;
(c) the process of disposing of spent fuel in the country;
(d) the environmental repercussions of the current method of spent fuel disposal along with environmental rules for disposal of spent fuel;
(e) whether there is any contingency plans for a level-7 accident arising from spent fuel disposal; and
(f) if so, the details thereof and if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) About 640 tons of spent fuel was generated in the year 2012-13 from nuclear power generation.
(b) India has adopted a closed fuel cycle option, which involves reprocessing and recycling of the spent fuel. During reprocessing, 2-3% of the spent fuel becomes waste and the rest is recycled.
(c) Spent fuel is a valuable material for India and we have adopted closed fuel cycle involving reprocessing & recycling. During reprocessing, as mentioned earlier, 2-3% of radioactivity associated with the spent fuel is generated in the form of high level liquid waste. A three step strategy is adopted in India for management of High Level Liquid Waste. This involves:

(i) Immobilising high level liquid waste into inert solid vitreous (glass) matrix. This process of converting high level liquid waste into solidified glass matrix is called ñvitrificationò.
(ii) Interim storage & cooling of these vitrified waste products in specially designed storage vaults for a period of 40-50 years. This is to dissipate the heat generated on account of decay of fission products associated with these waste products, and
(iii) After 40-50 years of storage, these cooled vitrified waste are disposed of in geological disposal facility (GDF).

(d) As mentioned above, in India no spent fuel is disposed off. Only 3% of the waste generated during reprocessing of the spent fuel is vitrified, cooled and will be eventually disposed off in Geological Disposal Facility. There are well defined rules and regulation given by Atomic Energy Regulatory Board for disposal of any nuclear waste. In any case, the impact on the environment is far far negligible compared to disposal of waste from non-nuclear power stations.
(e)&(f) The discharged spent fuel from reactors is stored in spent fuel storage bay either at reactor site or at reprocessing facilities. All the spent fuel storage bays are adequately designed and will not lead to any level-7 accidents.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus469.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.518
TO BE ANSWERED ON 07.08.2013

NUCLEAR DEAL WITH FRANCE

518. DR. ANUP KUMAR SAHA:
SHRI BANSA GOPAL CHOWDHURY:
PROF. Sk. SAIDUL HAQUE:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has signed the commercial agreement with the French company AREVA for building two nuclear reactors at Jaitapur;
(b) if so, the details thereof;
(c) whether costly imported reactors are allegedly being considered by the Government under nuclear energy programme without thorough safety review or detailed techno-economic analysis; and
(d) if so, the response of the Government thereto?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) No, Sir.
(b) Does not arise.
(c)&(d) Safety is accorded the utmost priority in all aspects of nuclear power Reactors based on foreign cooperation are set up only after their safety is reviewed and certified by the regulatory authority in the vendor country and Atomic Energy Regulatory Board (AERB) in India. Such reactors are set up strictly in accordance with the stage-wise clearances accorded by the AERB after thorough reviews. Discussions on the techno-commercial aspects are directed towards the fundamental objective of ensuring a viable tariff of electricity to be generated by these reactors.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus518.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.544
TO BE ANSWERED ON 07.08.2013

SECURITY AND SAFETY OF NUCLEAR POWER PLANTS

544. SHRI DHANANJAY SINGH:
SHRI E.G. SUGAVANAM:
SHRI KALIKESH N. SINGH DEO:
SHRIMATI ANNU TANDON:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has made any efforts to ascertain the security and safety of the existing and under construction nuclear plants in the country;
(b) if so, the details thereof along with a comparison of India's nuclear safety system with those of developed countries;
(c) the current preparedness to deal with radiation's from nuclear plants;
(d) whether the Government has a set of regulations in place to address nuclear safety concerns and if so, the details thereof;
(e) whether the Government plans to bring in stringent punishment for violating safety guidelines in place of a paltry fine of 500 rupees and if so, the details thereof; and
(f) the progress made in the setting up of an independent nuclear safety regulatory authority in the country?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The safety and security of existing nuclear power plants in the country is monitored on continuous basis and periodic safety and security audits are carried out as prescribed.
(b) Nuclear power plants in India are designed, built and operated in accordance with the safety and security requirements and guidelines prescribed by Atomic Energy Regulatory Board (AERB) in the form of Safety Codes, Safety Guides, Safety Manuals and Technical documents. These requirements/guidelines are in line with the safety and security standards advised by the International Atomic Energy Agency (IAEA) and other international bodies.
(c) Nuclear Power Plants in India have sufficient safeguards by way of design features, operating practices and regulatory controls against any major radiological releases. The release of radioactivity from the plants and the environmental matrices in the vicinity of the plants are monitored regularly for radiation levels through a robust monitoring mechanism. Emergency preparedness and response plans are available at all Nuclear Power Plants (NPPs)

to cater to an unlikely event involving release of radioactive substances. The NPPs conduct periodic exercise using these plans.

(d) The high level documents of AERB viz. Radiation Protection Rules, 2004, the Mission Statement and the Codes of AERB, address nuclear safety concerns. AERB has published 141 regulatory documents relating to the regulation and safety aspects of the facilities regulated by it.

(e) The provision of fine of `500 under Section 30(3) of the Atomic Energy Act, 1962 is in regard to minor administrative lapses. Special provisions pertaining to safety are provided under Section 17 of the Act. Contravention of any rules made under Section 17 (special provisions as to safety) shall be punishable with imprisonment for a term which may extend to five years, or with fine, or both. Other enforcement actions ranging from written warnings to withdrawal/suspension of the consent are also available to AERB. The withdrawal of licence by itself is a very severe economic penalty and has the potential to seriously affect the financial health of the stake holder.

(f) The Nuclear Safety Regulatory Authority Bill, 2011 was introduced in Parliament in 2011. Government proposes to introduce official amendments to the said Bill.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus544.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.576
TO BE ANSWERED ON 07.08.2013

GENERATION OF POWER FROM KUDANKULAM

576. SHRI P.K. BIJU:
ADV. A. SAMPATH:
SHRI C. RAJENDRAN

Will the PRIME MINISTER be pleased to state:

(a) whether all the safety parameters have been undertaken before giving permission for commissioning of Kudankulam power plant and if so, the details thereof;
(b) whether the power plant has started functioning;
(c) if so, the details thereof and the power that is being generated; and
(d) if not, the reasons therefor and the time by which the plant is likely to start functioning?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir. Commissioning of a Nuclear Power Plant (NPP) involves conducting series of checks and tests, separately system-wise and also in an integrated manner, to see whether all the systems perform as intended in design and all parameters important to safety conform to acceptance criteria. These commissioning tests are divided into several phases. Test results of each phase are reviewed by Atomic Energy Regulatory board (AERB) safety committees before giving clearance for the next phase.
(b)to(d) The Unit-1 of Kudankulam Nuclear Power Project (KKNPP) has attained the first criticality (start of controlled self sustaining fission chain reaction for the first time) on July 13,2013. Following the criticality, low power physics experiments have been completed as per the laid down procedures and regulatory clearance. The next phase of commissioning involving gradual increase in power and various test at different power levels, will begin once the process of review of the test results obtained in the low power physics Experiment phase is completed by AERB and the required clearances are given to NPCIL. Synchronization of the unit with the southern grid and generation of power is expected in about 45 days after this clearance by the AERB .

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus576.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.651
TO BE ANSWERED ON 07.08.2013

NUCLEAR NEGOTIATIONS WITH AUSTRALIA

651. SHRI GAJANAN D. BABAR:
SHRI ADHALRAO PATIL SHIVAJI:
SHRI DHARMENDRA YADAV:
SHRI ANANDRAO ADSUL:

Will the PRIME MINISTER be pleased to state:

(a) whether the Australia has agreed to supply uranium to India for peaceful purposes;
(b) if so, the details thereof;
(c) if not, the reasons therefor and the outcome of the first and second round of negotiations in this regard; and
(d) the steps taken/being taken by the Government to arrive at a civil nuclear cooperation agreement with Australia?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) to (d) As stated in the Joint Press Statement on the State Visit of the Prime Minister of Australia to India on 17 October 2012, the bilateral Civil Nuclear Cooperation Agreement is for Australia a prerequisite for uranium sales to other countries. Discussions have been initiated with Australia on the proposed bilateral Civil Nuclear Cooperation Agreement.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus651.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1422
TO BE ANSWERED ON 14.08.2013

HEAVY AND LIGHT WATER REACTORS

1422. SHRI RAM SUNDAR DAS

Will the PRIME MINISTER be pleased to state:

(a) the details of the Heavy and Light Water Reactors installed in the various Nuclear Power Plants in the country along with the power generated by these reactors, separately during the 11th Five Year Plan;
(b) the per unit cost of production of nuclear energy in the country;
(c) whether nuclear energy is costlier in the country than in other developing countries; and
(d) if so, the details thereof and the steps taken/proposed to be taken by the Government to bring down the cost of nuclear energy?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) There are 20 nuclear power plants in the country with installed capacity of 4780 MW, comprising of 18 Pressurised Heavy Water Reactors (PHWRs) and 2 Light Water Reactors (LWRs). Of these, one PHWR [Rajasthan Atomic Power Station (RAPS) Unit-1 (100 MW)] is under extended shutdown from October 2004. The remaining seventeen PHWRs, with a total capacity of 4360 MW, and two LWRs, with a capacity of 320 MW, are operating. Generation of electrical energy through Nuclear Power Plants in the country, in the 11th Five Year Plan period, amounted to 97161 Million Units (MUs) from PHWRs and 12481 MUs from LWRs.
(b) The average generation tariff for nuclear power in the year 2012-13 was `2.69 per kWh (kilowatt-Hr). The tariff for the latest nuclear power plant (commissioned in the year 2010) is currently, about `3.44 per kWh.
(c) No, Sir.
(d) Does not arise.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus1422.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1465
TO BE ANSWERED ON 14.08.2013

THORIUM RESERVES

1465. SHRI NIKHIL KUMAR CHOUDHARY
.
Will the PRIME MINISTER be pleased to state:

(a) whether the Government has identified thorium reserves in the country during the last three years and the current year; and
(b) if so, the details thereof, State-wise?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.
(b) Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy (DAE), has established sizeable in situ reserves of thorium contained in the mineral Monazite occurring in beach sands. The thorium reserves identified by AMD during the last three years are as follows:

State	Monazite (Million tonne)		
	Reserve as on 31.10.2009	Addition of Reserves	Reserve as on May 2013
Odisha	1.85	0.56	2.41
Andhra Pradesh	3.72	--	3.72
Tamil Nadu	2.16	0.30	2.46
Kerala	1.51	0.39	1.90
West Bengal	1.22	--	1.22
Jharkhand	0.22	--	0.22
Total	10.68	1.25	11.93

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus1465.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1497
TO BE ANSWERED ON 14.08.2013

CIVIL NUCLEAR AGREEMENT

1497. SHRI S.R. JEYADURAI
SHRI SOMEN MITRA
.
Will the PRIME MINISTER be pleased to state:

(a) whether India and US have been engaged in any discussions recently on Civil Nuclear Agreement between the two countries;
(b) if so, the details thereof;
(c) whether Westinghouse Electric Company, USA and the Nuclear Power Company of India Limited (NPCIL) had signed a Memorandum of Understanding (MoU) to negotiate an Early Works Agreement (EWA) supporting future construction of nuclear power plants at the Mithivirdi site in Gujarat and if so, if the facts of the matter; and
(d) whether the contract has been finalised and if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) 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 signed on 10th October 2008. Discussions in regard to and review of implementation of the Agreement are held from time to time. (c)&(d) Nuclear Power Corporation of India Limited (NPCIL) and M/s Westinghouse Electric Company (WEC), USA had signed a Memorandum of Understanding (MoU) that included negotiation of an early/pre-early Works Agreement. The discussions regarding supply of AP 1000 nuclear power reactors is, however, subject to outcome of ongoing techno-commercial negotiations between the two parties.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus1497.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1516
TO BE ANSWERED ON 14.08.2013

RADIATION FROM NUCLEAR ENERGY PLANTS

1516. SHRIMATI BHAVANA GAWALI PATIL

Will the PRIME MINISTER be pleased to state:

(a) whether any study has been conducted in regard to adverse effects of radiation in villages near nuclear energy plants working in the country;
(b) if so, the details thereof;
(c) the details of the rehabilitation package offered to the inhabitants of these villages;
(d) whether the Government has negotiated with the State Governments in regard to these studies and resettlement package; and
(e) if so, the reaction of the State Governments thereto?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Environmental Survey Laboratories (ESLs) are installed at all atomic power station sites under Department of Atomic Energy (DAE) well before the commissioning of the reactor. ESLs carry out pre-operational survey to establish the pre-operational baseline radioactivity levels of the site. During operation period of the reactor, environmental samples such as air, water, soil, vegetations, agricultural produces, milk, meat and other dietary products are collected periodically and analysed for radioactivity. ESLs are equipped with highly sensitive instruments and sufficient infrastructure to analyse extremely low levels of radioactivity in environmental samples. The radioactivity levels in environmental samples are compared with pre-operational values in the respective matrix. The studies carried out at various power station sites have clearly indicated that there is no unacceptable build up of radioactivity in the environment. The annual radiation doses to the general public from nuclear plants are insignificant as compared to that received from natural background radiation with no potential to cause any adverse health impact..
(c)to(e) Do not arise in view of (a) & (b) above.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus1516.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1532
TO BE ANSWERED ON 14.08.2013

LEAKAGE OF RADIOACTIVE WASTE

1532. SHRI KALIKESH N. SINGH DEO:

Will the PRIME MINISTER be pleased to state:

(a) whether there is a leakage of radioactive waste from the Bhabha Atomic Research Centre (BARC) into Thane Creek and if so, the details thereof;
(b) whether the Government has taken any steps to curtail such leakage and if so, the details thereof;
(c) whether the Government has made any study to assess the impact of radioactive waste leakage on environment and health and if so, the details thereof; and
(d) the action taken/proposed to be taken in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Sir, there is no leakage of radioactive waste in the Thane Creek from BARC facilities at Trombay. All effluents are treated to bring their radiation levels well below the stringent regulatory limits set by Atomic Energy Regulatory Board (AERB) before they are discharged from the BARC facilities to the Thane Creek.
(b) Does not arise in view of (a) above.
(c) An environmental surveillance programme is carried out regularly at Thane creek for the measurement of various man-made radionuclides in different matrices like water, biota and sediment. From the analysis, it is observed that the levels of radioactivity in Thane creek are practically the same as that of natural background. Hence, there is no hazard to the health of general public and to the environment due to the discharges from BARC facilities.
(d) Does not arise in view of
(c) above.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lsus1532.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.1533
TO BE ANSWERED ON 14.08.2013

NUCLEAR ENERGY

1533. SHRI YASHWANT SINHA:

Will the PRIME MINISTER be pleased to state:

(a) the progress made in the Indo-US nuclear deal;
(b) the number of new nuclear reactors ready to be installed in the country;
(c) the progress achieved by the thorium nuclear reactor in the country; and
(d) the expected cost of power per megawatt from the imported reactors and the indigenous thorium based reactors?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Pursuant to article 6(iii) of the Agreement for cooperation concerning Peaceful Uses of Atomic Energy (of 2008) between the Government of the United States of America and the Government of India an Agreement on Arrangements and Procedures concerning reprocessing or other alteration in form or content of nuclear material, etc., was signed on 30th July 2010. The Administrative Arrangement under Article 17 of the Agreement is under discussion. Nuclear Power Corporation of India Limited (NPCIL) is engaged in techno-commercial discussions with M/s Westinghouse Electric Company and M/s General Electric-Hitachi in respect of the nuclear power projects at Mithivirdi and Kovvada respectively.

(b) The Unit-1 of Kudankulam Nuclear Power Project (KKNPP) has attained the first criticality (start of controlled self-sustaining fission chain reaction for the first time) on July 13, 2013. Work on Unit-2 of KKNPP is closely following that of Unit-1. Construction of five more nuclear power reactors viz. Rajasthan Atomic Power Station (RAPS) Units 7 & 8 at Rawatbhata in Rajasthan, Kakrapar Atomic Power Station (KAPS Units) 3 & 4 at Kakrapar in Gujarat and Prototype Fast Breeder Reactor (PFBR) at Kalpakkam in Tamil Nadu is in progress. Government has accorded financial sanction in March 2013 for setting up of Kudankulam Nuclear Power Project Units 3 & 4 (2X1000 MW) in technical cooperation with Russian Federation.
(c) Thorium plays a pivotal role in the Indian Nuclear power programme. Right from the inception of Indian nuclear power programme, work has been carried out on various aspects of thorium utilisation such as mining and extraction of thorium, fuel fabrication, irradiation in

reactors, reprocessing and refabrication etc. In addition, studies have been carried out regarding use of thorium in different types of reactors. Details of Research Programme:

(i) Thorium fuel fabrication through powder pellet route has been well established. Few tons of fuel have been made for CIRUS and Dhruva, Pressurised Heavy Water Reactor (PHWR) and for blanket assemblies for Fast Breeder Test Reactor (FBTR). Few pins have been fabricated using mixed oxides of (Th-Pu) for irradiation in research reactors. (ii) Thoria bundles are used in the initial cores of PHWR. The irradiation experience of thoria fuel in the research reactors CIRUS and Dhruva, PHWR and test irradiations are satisfactory. (iii) The thoria pins of CIRUS have been reprocessed to obtain U233. The recovered U233 has been fabricated as fuel for KAMINI reactor at Kalpakkam. The Post Irradiation Examination of one of the thoria bundle irradiated in PHWR has also been carried out for validation of theoretical analyses. (iv) Studies have been carried out regarding use of thorium in different types of reactors with respect to fuel management, reactor control and fuel utilisation. (v) A Critical Facility for Advanced Heavy Water Reactor has been commissioned in 2008 and is used for carrying out experiments to further validate the physics design features of Advanced Heavy Water Reactor. (vi) A small research reactor KAMINI with 30 kWth capacity which utilises nuclear fuel based on Uranium-233 derived from irradiation of thorium, has been in operation at Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam. Generation of power from Thorium:(i) While it is true that Thorium can be used to produce nuclear energy, it should be noted that Thorium cannot be used directly. Thorium does not contain any fissile isotope, hence it cannot be used in a reactor alone. It can be used with added fissile material that can be either enriched Uranium, Plutonium or Uranium-233 (obtained after irradiation of Thorium). (ii) Thorium absorbs the neutrons, which can more efficiently produce more Plutonium in a Plutonium-Uranium fuelled Fast Breeder Reactor for a faster growth. Therefore, using Thorium in the first, or an early part of second stage of nuclear power programme will adversely affect the rate of growth of nuclear power generation capacity in the initial periods. (iii) Due to these reasons, large scale deployment of Thorium is to be postponed till the later part of the second stage. Thorium is to be introduced for large scale deployment at an optimal point during operation of Fast Breeder Reactors in the second stage. The third stage of Indian nuclear power programme contemplates making use of Uranium-233 to fuel Uranium-233 ï Thorium based reactors, which can provide energy independence to the country for several centuries. é 3 -3- (iv) For timely development and demonstration of thorium deployment technologies on a large scale, alongwith extensive use of passive safety systems, Bhabha Atomic Research Centre (BARC) has designed a 300 MW Advanced Heavy Water Reactor (AHWR) to serve as a technology demonstrator. Activities towards construction of AHWR are proposed to start in the XII Plan period.

(d) The Kudankulam Nuclear Power Project (KKNPP) Units 3 & 4, having capacity of 1000 MW each to be constructed at the existing Kudankulam site in Tamil Nadu, in technical cooperation with Russian Federation, is expected to have a completion cost of `39,849 crore (at an exchange rate of `55 per dollar) yielding a completion cost/per MWe installed of about `20 crore/MW. The cost of reactors proposed to be set up in cooperation with USA and

France will emerge after conclusion of techno-commercial negotiations, now in progress. As indicated in the answer to part © above, the deployment of thorium based commercial nuclear power plants is envisaged in the third stage of Indian nuclear power programme.

*****

(http://dae.nic.in/writereaddata/parl/mansoon2013/lssq1533.pdf)

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO. 72
TO BE ANSWERED ON 08.08.2013

NEW NUCLEAR POWER REACTORS IN THE COUNTRY

*72 SHRI C.M. RAMESH:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that the Twelfth Five Year Plan proposal envisages Nineteen new Nuclear Power Reactors in the country with a total capacity of 17,400 MW; and

(b) if so, the details of new Nuclear Power Reactors to be established during the Twelfth Five Year Plan ?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b) A Statement is laid on the Table of the House

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO.72 FOR ANSWER ON 08.08.2013 BY SHRI C.M. RAMESH REGARDING NEW NUCLEAR POWER REACTORS IN THE COUNTRY

(a) Yes, Sir.

(b) The XII Five Year Plan proposal envisages start of work on eight Pressurised Heavy Water Reactors (PHWRs) of 700 MW each, eight Light Water Reactors (LWRs) with foreign cooperation each of 1000 MW and higher capacity, two 500 MW Fast Breeder Reactors (FBRs) and an Advanced Heavy Water Reactor (AHWR) of 300 MW. The details are as under:

S.No.	Project	Location	Reactor Type	Capacity (MW)
	Indigenous Reactors			
1	Gorakhpur , Units 1&2	Gorakhpur, Haryana	PHWR	2X700
2	Chutka, Units 1&2	Chutka, Madhya Pradesh	PHWR	2X700
3	Mahi Banswara, Units 1&2	Mahi Banswara, Rajasthan	PHWR	2X700
4	Kaiga , Units 5&6	Kaiga, Karnataka	PHWR	2X700
5	Fast Breeder Reactor Units 1&2	Kalpakkam, Tamil Nadu	FBR	2X500
6	Advanced Heavy Water Reactor	Location to be decided	AHWR	300
	Reactors with foreign cooperation			
7	Kudankulam Units 3&4	Kudankulam, Tamil Nadu	LWR	2X1000
8	Jaitapur Units 1&2	Jaitapur, Maharashtra	LWR	2X1650
9	Kovvadda Units 1&2	Kovvada, Andhra Pradesh	LWR	2X1500
10	Chhaya Mithi Virdi Units 1&2	Chhaya Mithi Virdi, Gujarat	LWR	2X1100

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rssq72.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.466
TO BE ANSWERED ON 08.08.2013

SAFETY AUDIT OF THE ATOMIC POWER PLANTS

466. SHRI SHADI LAL BATRA

Will the PRIME MINISTER be pleased to state:

(a) whether Government has contemplated any plan for periodic safety audit of the Atomic power plants in the country; if so, the details thereof; and

(b) the time schedule fixed for such audit, plant-wise?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Periodic safety audit of all atomic power plants in India is carried out by the Atomic Energy Regulatory Board (AERB). All nuclear power projects undergo an elaborate in-depth safety review during the consenting stages, viz. siting, construction, commissioning, etc. After satisfactory review during project stage, AERB issues operating licence to a nuclear power plant for a period of upto five years. During the licence period, nuclear power plants are under regulatory surveillance and their safety performance is continuously monitored in compliance with prescribed guidelines. A minimum of two regulatory inspections of each nuclear power plant is also carried out in a year to verify compliance with various safety requirements. A consolidated safety assessment of the plant is undertaken while renewing the operating licence.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus466.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.467
TO BE ANSWERED ON 08.08.2013

LOCATION OF NEW NUCLEAR POWER PLANTS IN THE COUNTRY

467.SHRI MOHD. ALI KHAN SHRIMATHI T. RATNA BAI

Will the PRIME MINISTER be pleased to state:

(a)whether Government has found new locations in the country to set up nuclear power plants in the Twelfth Plan period with some future action plan; and
(b)if so, the details thereof, State-wise including Kovvada in Srikakulam District in Andhra Pradesh and the present status thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)Yes Sir, except for the Advanced Heavy Water Reactor (AHWR) of capacity 300 MW.
(b)The XII Five Year Plan proposals envisage start of work on eight Pressurised Heavy Water Reactors (PHWRs) of 700 MW each, eight Light Water Reactors (LWRs) each of 1000 MW or higher capacity, with international cooperation, two 500 MW Fast Breeder Reactors (FBRs) and an Advanced Heavy Water Reactor (AHWR) of 300 MW. The work on these projects are planned to be started in the XII Five Year Plan and completed in the XIII/Early XIV Five Year Plan. Details of proposed XII Five Year Plan new projects along with locations and present status are given below:-

S.No.	Name of Project	Location	Reactor Type	Capacity (MW)	Present status
Indigenous Reactors					
1	Gorakhpur Units 1&2	Gorakhpur, Haryana	PHWR	2X700	Land acquisition completed, Environmental clearance at final stage, proposal for financial sanction finalised, set in motion.
2	Chutka, Units 1&2	Chutka, Madhya Pradesh	PHWR	2X700	Pre-project activities like land acquisition, environmental clearance and site investigations are in progress.
3	Mahi Banswara, Units 1&2	Mahi Banswara, Rajasthan	PHWR	2X700	
4	Kaiga Units 5&6	Kaiga, Karnataka	PHWR	2X700	The land is already available. Other pre-project activities are being initiated
5	Fast Breeder Reactor Units 1&2	Kalpakkam, Tamil Nadu	FBR	2X500	Site Selection Committee of AERB has cleared the site for the proposed 2 Fast Breeder Reactors. The pre-project activities like geo-technical investigation, and site evaluation report has been completed. Environmental Impact Assessment (EIA) report has been submitted to Tamil Nadu Pollution Control Board. Site plot plan has been finalised. Site hydrography survey by National Hydrography Office (NHO) has also been completed.
6	Advanced Heavy Water Reactor	Location to be decided	AHWR	300	The proposal for siting AHWR at Tarapur is under consideration of Standing Site Selection Committee of DAE.
Reactors with foreign cooperation					
7	Kudankulam Units 3&4	Kudankulam Tamil Nadu	LWR	2X1000	Land available, environmental and CRZ clearances received, project accorded financial sanction. Start of construction expected by June 2014.
8	Jaitapur Units 1&2	Jaitapur, Maharashtra	LWR	2X1650	Land available, Environmental and CRZ clearances received, techno-commercial discussions to arrive at project proposal & site infrastructure works in progress.
9	Kovvada Units 1&2	Kovvada, Andhra Pradesh	LWR	2X1500	Pre-project activities comprising land acquisition, obtaining environmental clearances, site investigations and discussions with US partners to arrive at project proposals are in progress.
10	Chhaya Mithi Virdi Units 1&2	Chhaya Mithi Virdi, Gujarat	LWR	2X1100	

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus467.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.468
TO BE ANSWERED ON 08.08.2013

AVAILABILITY OF PLUTONIUM FOR THE FBR

468. DR. CHANDAN MITRA:

Will the PRIME MINISTER be pleased to state:

(a) whether the Fast Breeder Reactor (FBR) at Kalpakkam, which was scheduled to go critical in mid 2009, has not been fully commissioned till now, if so, the reasons thereof;

(b) the alternative arrangements made by Government for ensuring regular and time bound availability of Plutonium for the FBR; and

(c) the time by which the FBR is likely to be commissioned and generate electricity?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes Sir, The originally approved date for criticality of 500 MW Prototype Fast Breeder Reactor (PFBR), under construction at Kalpakkam in Tamil Nadu, was September, 2010, which was later revised to September, 2014. The PFBR, being first of its kind in the country, encountered certain technological complexities during equipment manufacture. Materials, specifications and dimensions are unique and Indian industries found it challenging to achieve these tolerances and stringent specifications. Industries had to develop several machine tools and new procedures to meet the design specifications which required more time than envisaged. (b) Government has already allocated fuel for PFBR criticality in September, 2014 and has tied up fuel availability for future operation of PFBR. (c) The revised approved date of criticality is September, 2014 and commercial operation is envisaged by March, 2015.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus468.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO: 469
TO BE ANSWERED ON 08/08/2013

NUCLEAR DISASTER PREPAREDNESS OF DAE

469. SHRI PARSHOTTAM KHODABHAI RUPALA :

Will the PRIME MINISTER be pleased to state:

(a) what action plan has been made by Department in consultation with Ministry of Health, National Disaster Management Authority and concerned State Governments to ensure best medical treatment to affected people, in case on any nuclear major disaster;

(b) whether DAE has approached State Governments and National Disaster Management Authority in this regard; if so, the details thereof; and

(c) by when exactly DAE is going to shape out a proper action plan in the matter?

ANSWER
THE MINISTER OF STATE FOR PARLIAMENTARY AFFAIRS, PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PMO (SHRI V. NARAYANASAMY):

(a) All Nuclear Reactor sites are having adequate emergency preparedness to ensure the protection of the occupational workers and members of the public. Based on our studies, we are not expecting any major health hazard for the members of the public requiring medical intervention for any postulated nuclear accidents in our Nuclear Power Plants (NPPs).

Even in the case of the Fukushima-Daiichi accident, the World Health Organisation Report released in February 2013 on the health risk assessment (adopting a highly conservative approach) shows that, ôFukushima-Daiichi accident has not resulted in acute radiation effects among workers. None of the seven reported deaths among workers is attributable to radiation exposureõ, and that the possible impact on the population affected is practically insignificant. Similarly, the Press Release following the 60th Session of the United Nations Scientific Committee on the Effect of Atomic Radiation (UNSCEAR) held in May 2013 reports the conclusion of the Session: ôRadiation exposure following the nuclear accident at Fukushima-Daiichi did not cause any immediate health effects. It is unlikely to be able to attribute any health effects in the future among the general public and the vast majority of workersõ. It further reports, that, ôOn the whole, the exposure of the Japanese population was low, or very

low, leading to correspondingly low risks of health effects in later lifeâ These two important reports should help reiterate the fact that there is little scope for members of public to encounter acute radiation effects due to NPPs.

As far as preparedness for a Nuclear Disaster that can result due to a nuclear strike by an adversary is concerned, it is being addressed by National Disaster Management Authority (NDMA) while the medical preparedness is to be strengthened by Ministry of Health for this purpose. It may be added that for any radiation or nuclear emergency DAE has well equipped medical facilities at each site with trained medical staff to respond to radiation injuries.

(b) Yes, sir. Emergency preparedness for public domain for major nuclear emergencies caused by nuclear accidents is required for taking care of sheltering, evacuation and iodine prophylaxis for the protection of the people. Such plans are prepared by Nuclear Power Plant (NPP) Authorities as per guidelines of the Atomic Energy Regulatory Board (AERB) and are submitted for approval of State Authorities. Nevertheless, NDMA is planning medical preparedness in districts adjacent to NPPs to address the concern among the public towards nuclear accidents.

(c) As requested by NDMA and Ministry of Health, DAE is providing all technical support and information required for the medical preparedness for districts near to NPPs. Since possible impact during nuclear accidents in NPPs is not likely to cause radiation injury to the people outside the site boundary, DAE is not anticipating requirement of medical intervention for the public during nuclear emergencies.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus469.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.470
TO BE ANSWERED ON 08.08.2013

KUDANKULAM NUCLEAR POWER PLANT

470. SHRI N BALAGANGA :

Will the PRIME MINISTER be pleased to state:

(a) whether the Kudankulam Nuclear Power Plant has attained criticality and started production; if so, the details thereof;

(b) whether Government of Tamil Nadu has requested the Centre to allot the entire power to Tamil Nadu as an adhoc measure; if so, the details thereof and the response of Government thereto; and

(c) whether Unit-II of the Plant is being commissioned; if so, the details thereof, including the likely time by which it would be commissioned?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The Unit-1 of Kudankulam Nuclear Power Project (KKNPP) has attained first criticality (start of controlled self sustaining fission chain reaction for the first time) on July 13,2013. Following the criticality, low power physics experiments have been completed as per the laid down procedures and regulatory clearance. The report on these tests have been submitted to Atomic Energy Regulatory Board (AERB) for review and granting clearance for the next phase of commissioning tests at different power levels. The power level of the unit will be increased in a step-wise manner to 50%, 75%, 90% and full power, after receipt of the stage-wise clearances of the AERB.

(b) On the request from the State Government of Tamil Nadu for allocating to them the entire power to be generated from KKNPP, Ministry of Power has informed that power has already been allocated from the KKNPP amongst the beneficiary States/Union Territories based on guidelines for allocation of power from central sector generating stations to the states/UTs. However, Ministry of Power has agreed for allocation of additional 100 MW power to Tamil Nadu out of unallocated power .

(c) Yes, Sir. The Unit-II of KKNPP is in advanced stages of commissioning. The loading of dummy fuel assemblies in the reactor has been recently completed. All efforts are being made to operationalise the unit by March 2014.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus470.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO.181
TO BE ANSWERED ON 22.08.2013

THORIUM RESERVES FOR ELECTRICITY GENERATION

*181. SMT JAYA BACHCHAN

Will the PRIME MINISTER be pleased to state:

(a) whether India has an abundance of Thorium Reserves which can be used for electricity generation; and

(b) whether Government has taken any steps to tap this resource for electricity generation and if so, the details thereof and if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b) A statement is placed on the table of the House.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rssq181.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1396
TO BE ANSWERED ON 22.08.2013

POWER GENERATION FROM KUDANKULAM POWER PLANT

1396. SHRI T.K. RANGARAJAN:

Will the PRIME MINISTER be pleased to state:

(a) the steps taken to appraise the people of Kudankulam about the power project;

(b) the causes for the present impasse in the production of power; and

(c) the present state of affairs in the Kudankulam Project?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Apprehensions about the safety of nuclear power plants have been generated in some sections of the population living in the neighbourhood of Kudankulam nuclear power project, consequent to the Fukushima incident in Japan. These apprehensions were further heightened due to certain misinformation spread by some groups who are ideologically opposed to development of nuclear power. Government of India has taken several steps to address the concerns of the people in this regard. An expert group of eminent persons from diverse backgrounds had been set up to study all safety aspects of Kudankulam Nuclear Power Project and allay the apprehensions of the people. Nuclear Power Corporation of India Limited (NPCIL) has also enhanced its public-outreach programme manifold around Kudankulam, adopting a multi-pronged approach comprising screening of TV commercials and short films explaining the robust safety measures in the Kudankulam plant, distribution of pamphlets in simple local language, airing radio jingles, organising visits of general public and media persons to the project sites. In addition, press meets were organised at Tirunelveli & Thiruvananthapuram in this regard. Exhibitions, lectures & presentations in schools and colleges have been held in Nagercoil and Tirunelveli and several other towns of Tamil Nadu. Briefings have also been carried out for state officials, peopleôs representatives and community leaders. Web-based public awareness has also been enhanced through the NPCIL website. The public outreach programmes being conducted by the NPCIL are continuing.

(b) There is no impasse at the Kudankulam project site at present.

(c) The Unit-1 of Kudankulam nuclear power project achieved first criticality (start of controlled self sustaining fission chain reaction for the first time) on July 13, 2013 and will start power generation soon on receipt of stage-wise clearances from Atomic Energy Regulatory Board (AERB).

*****

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO. 181 DUE FOR ANSWER ON 22.08.2013 BY SMT JAYA BACHCHAN REGARDING THORIUM RESERVES FOR ELECTRICITY GENERATION.

(a) Yes, Sir. Thorium is abundantly available in India, in the beach sand, placer deposits along the west and east coasts of India. The Department of Atomic Energy (DAE) through its Atomic Minerals Directorate for Exploration & Research (AMD) has surveyed almost the entire Indian coastline and identified locations where the beach sand contains significant quantities of monazite, which is the main source of thorium in India. Exploration activities carried out by AMD over the past six decades have resulted in establishing in situ resources of 11.93 million tonnes of monazite in the country, which in turn contains about 1.07 million tonnes of thorium oxide (ThO2).

(b) Unlike Uranium, which can be used as nuclear fuel, thorium alone cannot be directly used as nuclear fuel. In the first instance, thorium has to be used along with either enriched uranium or plutonium while being put into any reactor. The spent fuel then contains an isotope called uranium-233. This is the second man-made fissile material apart from plutonium. The third stage of Indian nuclear power programme contemplates making use of Uranium-233 to fuel Uranium-233 ï Thorium based reactors, to provide energy independence to the country for several centuries. The intention of the DAE is to use thorium as the main stay of its long-term nuclear power programme. Using the nuclear properties of uranium, plutonium and thorium, it can be easily shown that to get a rapid growth of installed nuclear generation capacity in a country like India with limited uranium resources, the large-scale deployment of thorium has to be postponed to the third stage of the Indian nuclear programme after the plutonium-based (Fast Breeder Reactors) (FBRs) have enabled accelerated growth in the nuclear generation capacity in the second stage of this programme. Bhabha Atomic Research Centre (BARC) and other research organisations attached with DAE are engaged in various R&D activities to address the utilisation of thorium in different types of reactors. Some important highlights of these activities are the
following :

(i) Thorium Oxide (Thoria) pellets contained in bundles have been used in the initial cores of our Pressurised Heavy Water Reactors (PHWRs). Thoria based fuels have also been irradiated

in the research reactors CIRUS and Dhruva. After such irradiation these fuel elements have been examined in the laboratories at BARC, yielding excellent results.

(ii) The irradiated thoria pins of CIRUS have been reprocessed to obtain U233. The recovered uranium 233 has been fabricated as fuel for the 30 Kilo Watt (thermal) KAMINI reactor which is in operation at Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam.

(iii) The very challenging technologies for fabrication of Thoria based fuel pellets, carrying uranium-233, have been established.

(iv) A 300 MW Advanced Heavy Water Reactor (AHWR) using thorium based fuel has been designed and developed. This reactor will serve as a technology demonstrator for not only the thorium fuel cycle technologies, but also several advanced passive safety features. A Critical Facility was commissioned in 2008 at BARC, and is used for carrying out experiments to further validate the physics design features of AHWR. A project for launching construction of AHWR has been included in the XII plan.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1396.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1397
TO BE ANSWERED ON 22.08.2013

FUNDS FOR NUCLEAR ENERGY

1397. DR. V. MAITREYAN:

Will the PRIME MINISTER be pleased to state:

(a) whether Government has earmarked `107186.73 crores in Twelfth Plan for the Department of Atomic Energy to spearhead various development activities particularly in generating nuclear energy;
(b) if so, the details thereof and funds allocated for the ongoing nuclear projects in the country including the Kudankulam Nuclear Power Project 1 and 2, Kakarpar 3 and 4 and Rajasthan 7 and 8;
(c) whether Government is taking steps and is confident of these proposed power projects being completed and commissioned well within the scheduled dateline; and (d) if so, the details thereof and the approximate time by which the project will be commissioned and production of nuclear energy shall begin?

ANSWER THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.
(b) The XII Five Year Plan outlay of the Department of Atomic Energy consists of Budgetary Support of `41615 crore and Internal and Extra-Budgetary Resources (IEBR) of `65572 crore. The total Plan outlay for nuclear power schemes is `88246 crore comprising `2652 crore budgetary support from Government, `61700 crore IEBR and `23894 crore external credit. Allocation for the ongoing Nuclear Power Projects during the Plan is `20963 crore comprising `1043 crore for Kudankulam Nuclear Power Project (KKNPP) Units 1&2 at Kudankulam in Tamil Nadu; `9038 crore for Kakrapar Atomic Power Project (KAPP) Units 3&4 at Kakrapar in Gujarat; `9410 crore for Rajasthan Atomic Power Project (RAPP) Units 7&8 at Rawatbhata in Rajasthan and `1472 crore for the Prototype Fast Breeder Reactor (PFBR) at Kalpakkam in Tamil Nadu.
(c) Yes, Sir.
(d) The ongoing nuclear power projects on progressive completion will add a capacity of 5300 MW in the XII Five Year Plan. The Unit-1 of KKNPP has attained first criticality (commencement of controlled self-sustaining fission chain reaction for the first time) on July 13, 2013 and is scheduled to start power generation soon on receipt of further stage-wise

clearances from Atomic Energy Regulatory Board (AERB). The Unit-2 of KKNPP will be made critical in accordance with the stage-wise clearances by AERB, by March 2014. PFBR is scheduled to attain criticality in September 2014. KAPP 3&4 and RAPP 7&8 are scheduled to be completed in the year 2016-17. Commencement of work on new nuclear power projects having total installed generating capacity of 17400 MW has been planned in the XII Five Year Plan i.e. in the next three years. These projects are scheduled to be completed in the XIII Five Year Plan and early XIV Five Year Plan.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1397.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1398
TO BE ANSWERED ON 22.08.2013

NUCLEAR SCIENCE RESEARCH PROGRAMME
1398. SHRI PIYUSH GOYAL:

Will the PRIME MINISTER be pleased to state:

(a) the steps taken by Government during the last three years to boost research in nuclear science in the country;

(b) whether there is any proposal to setup research reactors in future and if so, the details thereof; and
(c) the details of the nuclear science research programmes proposed in the Twelfth Five Year Plan?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The R&D activities in DAE have been oriented towards building self-reliant capabilities in all aspects related to the nuclear fuel cycle for all the three stages of the nuclear power programme. To strengthen our capability, so that our country remains unaffected by technology denial regimes and to keep Indiaôs nuclear power programme in tune with our nuclear resource profile, R&D programmes have been designed keeping in view our modest uranium and abundant thorium resources. To augment installed nuclear power capacity, maximum possible thrust is being given to uranium exploration, both for developing new techniques for exploration and for deploying known techniques for quick results. In addition, DAE undertakes frontline basic research programmes in several areas including nuclear & high energy physics, laser science & applications, condensed matter physics and materials science, separation sciences, hydrogen energy systems, analytical chemistry, radiation chemistry, radiation and structural biology, cancer research and astronomy. The steps taken by the Government to boost research in nuclear science in the country
include:
é
i) A well-defined human resource development programme implemented through the Bhabha Atomic Research Centre (BARC) Training School and its affiliate Training Schools at Raja Ramanna Centre for Advanced Technology, Indore (RRCAT), Nuclear Fuel Complex(NFC),

Hyderabad, Nuclear Power Corporation India Ltd. (NPCIL) and Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam is in place.

ii) A variety of approaches to strengthen the interaction with academic and research institutes have been adopted for attracting talented candidates for employment.

iii) In order to provide avenues for the employees towards acquiring higher academic degrees and to attract young research scholars to pursue the doctoral programmes in multi-disciplinary R&D areas, Homi Bhabha National Institute, a deemed university, has been established by the Department.

(b) There is a proposal to set up two new research reactors (30 MWth High Flux Research Reactor (HFRR), and 125 MWth Research Reactor at BARC Campus, Vizag) in the future.

The proposed High Flux Research Reactor will have 30 MW with a maximum thermal and fast neutron flux of 6.7 x 1014 &1.8 x1014 n/cm2/sec respectively. The pool type reactor will cater to increasing needs of radioisotopes, particularly the ones of high specific activity, fuel & material testing and advanced beam tube research.

The 125 MW Thermal Research Reactor is proposed to be constructed at new BARC campus in Vizag, to meet the requirement of irradiation of materials. The proposed reactor will also have facilities for neutron beam tube research, radioisotope production, Neutron Activation Analysis and Neutron Radiography. The proposed reactor will be similar in design to existing Dhruva research reactor at BARC Trombay.

The construction of these reactors is scheduled to commence during the later part of XII Plan.

(c) Main areas of research proposed to be covered during XII Plan are Accelerators, Super Computing, Chemical Sciences, Basic Sciences, Materials, Fuels, Waste Disposal, Electronics & Instrumentation, Fast Reactor Technology, Metallurgy & Materials Science, Reactor Design & Safety Engineering , Engineering Services & Infrastructure, Reactor Operation and Resource Management, Advanced Nuclear Reactors, Food Preservation, Life enhancement of Nuclear power plants, Radiopharmaceuticals, Cancer, International Collaboration in Advanced Fields, Nuclear Safety. A total number of 254 new projects have been proposed under the R&D Sector of the Department during XII Plan. The approved outlay for the XII Plan (R&D Sector) of DAE is `19,878 crore.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1398.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1399
TO BE ANSWERED ON 22.08.2013

URANIUM MINING WASTE

1399. DR. T.N. SEEMA :

Will the PRIME MINISTER be pleased to state:

(a) whether it has been reported that heaps of uranium mining wastes have been abandoned in Dhodanga, Kerwadungri villages and around Banduhurang open cast mine in Jharkhand by the Uranium Corporation of India Ltd. (UCIL); if so, the details thereof;

(b) whether the sludge and waste (containing 85% radioactive substances) from these uranium mines are being scientifically disposed of;

(c) if so, the details of the scientific disposal with the total number of fenced tailing ponds created in Jharkhand's Jaduguda area, and

(d) the complete details of periodic inspection of UCIL in this regard by the Atomic Energy Regulatory Board (AERB)?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) No, Sir
(b) Yes, Sir. Solid wastes from uranium mines containing very low amount of radioactivity (less than 0.015% of Uranium Oxide U3O8) are scientifically disposed
(c) The sludge and waste from the mines of Uranium Corporation of India Limited (UCIL) are disposed off in specially designed waste dumps within UCIL's premises, in accordance with Atomic Energy Regulatory Board (AERB) guidelines. The dumps are constructed as per Directorate General of Mines Safety (DGMS) and AERB norms. Liquid wastes from mines are sent to Effluent Treatment Plant (ETP) of uranium ore processing plant (mill) for treatment. The treated effluent from ETP is discharged only after conforming to the regulatory norms. Uranium mill generates tailings. Coarse parts of tailings are sent to underground mines for filling voids. Fine parts of tailings are sent into special engineered structures known as tailing ponds. At tailings pond, the fine tailings settle down and the clear supernatant is

directed to ETP. The treated effluent from ETP is discharged only after conforming to the regulatory norms. There are three tailing ponds in Jaduguda area. These tailing ponds are designed based on detailed analysis of structural stability under worst case meteorological and seismic conditions. During the design, it is ensured that all measures are in place to avoid migration of radioactivity into groundwater. The concept of defence in-depth has been introduced in the latest design of tailing ponds by having a check dam as a secondary containment. The tailing ponds are fenced to prevent unauthorized access.
(d) AERB has an established procedure for carrying out regulatory inspections. It carries out regulatory inspections of all the uranium mines of UCIL once in a year; and uranium mills and tailing ponds twice a year. In addition, periodic review of the projects and the operating plants is carried out by various expert committees constituted by AERB.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1399.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1400
TO BE ANSWERED ON 22.08.2013

POWER GENERATION FROM KUDANKULAM POWER PLANT

1400. SHRI V.P. SINGH BADNORE:

Will the PRIME MINISTER be pleased to state:

(a) whether the Nuclear Power Plant at Kudankulam has became functional and started generation; if so, the details thereof;
(b) the total capacity of the Kudankulam Nuclear Power Plant and when would it generate power to it full capacity; and
(c) the details of sources supplying the nuclear fuel for the plant?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a)&(b) Kudankulam Nuclear Power Project (KKNPP) comprises of two units of 1000 MW each. The Unit-1 of the project has attained first criticality (commencement of controlled self-sustaining fission chain reaction for the first time) on July 13, 2013. Following the criticality, low-power physics experiments have been completed as per the laid down procedures. The reports of these tests were submitted to Atomic Energy Regulatory Board (AERB) for review and granting clearance for the next phase of commissioning. This clearance has been also been received. Accordingly the unit will start generating power step-wise at 50%; 75%; 90% and full power soon on receipt of further stage-wise clearances from AERB. The Unit-2 of KKNPP is scheduled to attain criticality by March 2014 and the same shall be operationalised as per the stage-wise clearances by AERB.
(c) Guarantee for life time fuel supply for the Kudankulam reactors is built into the Inter-governmental Agreement (IGA) with the Russian Federation .

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1400.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1401
TO BE ANSWERED ON 22.08.2013

DELAY IN JAITAPUR PLANT

1401. SHRI PIYUSH GOYAL:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that the work on the reactors at Jaitapur has been significantly delayed and it is now expected to go on stream in 2015; if so, the details thereof with the present status of work on t he project;
(b) the initial estimated cost of Jaitapur reactors as against the current expected cost; and
(c) whether Government expects further cost overruns; if so, the steps taken by Government in this regard?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The XII Five Year Plan proposals envisage start of work on Jaitapur Nuclear Power Project in October, 2015. Thus, there is no delay in respect of the project currently.
(b) The cost of the reactors will emerge on conclusion of techno-commercial discussions.
(c) Does not arise.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1401.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1402
TO BE ANSWERED ON 22.08.2013

RUNNING POWER PLANTS IN THE COUNTRY

1402. SHRI PARVEZ HASHMI:

Will the PRIME MINISTER be pleased to state:

(a) the details of nuclear power plants in the country and the amount of power production thereof, State-wise;

(b) the details of States where such power plants are proposed to be established and its expected production thereof; and

(c) the details of the special projects which is being proposed by Government in view of increasing future demand of power?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The details of nuclear power plants operating in the country, state-wise are as under:

	Unit	Reactor Type	Capacity (MW)	Commencement of Commercial operation
Tarapur, Maharashra				
1	TAPS-1	BWR	160	28 Oct. 1969
2	TAPS-2	BWR	160	28 Oct. 1969
3	TAPS-3	PHWR	540	18 Aug. 2006
4	TAPS-4	PHWR	540	12 Sept. 2005
Kakrapar, Gujarat				
1	KAPS-1	PHWR	220	06 May 1993
2	KAPS-2	PHWR	220	01 Sept. 1995
Rawatbhata, Rajasthan *				
1	RAPS-2	PHWR	200	01 Apr. 1981
2	RAPS-3	PHWR	220	01 June 2000
3	RAPS-4	PHWR	220	23 Dec. 2000
4	RAPS-5	PHWR	220	04-Feb-2010
5	RAPS-6	PHWR	220	31-Mar-2010
Narora, Uttar Pradesh				
1	NAPS-1	PHWR	220	01 Jan. 1991
2	NAPS-2	PHWR	220	01 July 1992
Kaiga, Karnataka				
1	KAIGA-1	PHWR	220	16 Nov. 2000
2	KAIGA-2	PHWR	220	16 Mar. 2000
3	KAIGA-3	PHWR	220	06 May 2007
4	KAIGA-4	PHWR	220	20-Jan-2011
Kalpakkam, Tamil Nadu				
1	MAPS-1	PHWR	220	27 Jan. 1984

**RAPS-1 (100 MW) is under extended shutdown since October 2004* ...2

In addition, there are two nuclear power reactors Kudankulam Nuclear Power Project (KKNPP) Units 1&2 (2X1000 MW) at Kudankulam, Tamil Nadu at an advanced stage of commissioning. Of the two units, KKNPP-1 (1000 MW) has achieved first criticality (start of controlled self sustaining fission chain reaction for the first time) on July 13, 2013 and is expected to be synchronised with grid soon. Five nuclear power reactors viz. Kakrapar Atomic Power Project (KAPP) Units 3&4 (2X700 MW) at Kakrapar, Gujarat, Rajasthan Atomic Power Project (RAPP) Units 7&8 (2X700 MW) at Rawatbhata, Rajasthan; and Prototype Fast Breeder Reactor (PFBR) (500 MW) at Kalpakkam, Tamil Nadu are also under construction.

(b) In the XII Five Year Plan, work is planned to be started on the following new nuclear power plants:

Project	Location	Type	Capacity (MW)
Indigenous Reactors			
GHAVP 1&2	Gorakhpur, Haryana	PHWR	2 x 700
CMAPP 1&2	Chutka, Madhya Pradesh		2 x 700
Mahi Banswara, 1&2	Mahi Banswara, Rajasthan		2 x 700
Kaiga 5&6	Kaiga, Karnataka		2 x 700
FBR 1&2	Kalpakkam, Tamilnadu	FBR	2 x 500
AHWR	Location to be decided	AHWR	300
Reactors with International Co-operation			
KKNPP 3&4	Kudankulam, Tamilnadu	LWR	2 x 1000
JNPP 1&2	Jaitapur, Maharashtra		2 x 1650
Kovvada, 1&2	Kovvada, Andhra Pradesh		2 x 1500
Chhaya Mithi Virdi, 1&2	Chhaya Mithi Virdi, Gujarat		2 x 1100

(c) An Initiative has been launched by the Government for the development of coal based Ultra Mega Power Projects (UMPPs) of about 4,000 MW capacity each under Tariff based competitive bidding. Three UMPPs have already been awarded to developers selected through tariff-based competitive bidding. These are Mundra UMPP in Gujarat, Sasan UMPP in Madhya Pradesh and Tilaiya UMPP in Jharkhand. All five units of Mundra UMPP have already commenced commercial operation. First unit of Sasan UMPP has been commissioned on 31.5.2013 and the remaining five units are scheduled to be commissioned by April 2016. For Tilaiya UMPP, land acquisition and preliminary works are under progress. Other UMPPs planned are Krishnapatnam in Andhra Pradesh, Bedabhal in Odisha and Cheyyor in Tamil Nadu.

*****

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.1402
TO BE ANSWERED ON 22.08.2013

RUNNING POWER PLANTS IN THE COUNTRY

1402. SHRI PARVEZ HASHMI:

Will the PRIME MINISTER be pleased to state:

(a) the details of nuclear power plants in the country and the amount of power production thereof, State-wise;

(b) the details of States where such power plants are proposed to be established and its expected production thereof; and

(c) the details of the special projects which is being proposed by Government in view of increasing future demand of power?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The details of nuclear power plants operating in the country, state-wise are as under:

	Unit	Reactor Type	Capacity (MW)	Commencement of Commercial operation
Tarapur, Maharashra				
1	TAPS-1	BWR	160	28 Oct. 1969
2	TAPS-2	BWR	160	28 Oct. 1969
3	TAPS-3	PHWR	540	18 Aug. 2006
4	TAPS-4	PHWR	540	12 Sept. 2005
Kakrapar, Gujarat				
1	KAPS-1	PHWR	220	06 May 1993
2	KAPS-2	PHWR	220	01 Sept. 1995
Rawatbhata, Rajasthan *				
1	RAPS-2	PHWR	200	01 Apr. 1981
2	RAPS-3	PHWR	220	01 June 2000
3	RAPS-4	PHWR	220	23 Dec. 2000
4	RAPS-5	PHWR	220	04-Feb-2010
5	RAPS-6	PHWR	220	31-Mar-2010
Narora, Uttar Pradesh				
1	NAPS-1	PHWR	220	01 Jan. 1991
2	NAPS-2	PHWR	220	01 July 1992
Kaiga, Karnataka				
1	KAIGA-1	PHWR	220	16 Nov. 2000
2	KAIGA-2	PHWR	220	16 Mar. 2000
3	KAIGA-3	PHWR	220	06 May 2007
4	KAIGA-4	PHWR	220	20-Jan-2011
Kalpakkam, Tamil Nadu				
1	MAPS-1	PHWR	220	27 Jan. 1984

**RAPS-1 (100 MW) is under extended shutdown since October 2004*

...2

In addition, there are two nuclear power reactors Kudankulam Nuclear Power Project (KKNPP) Units 1&2 (2X1000 MW) at Kudankulam, Tamil Nadu at an advanced stage of commissioning. Of the two units, KKNPP-1 (1000 MW) has achieved first criticality (start of controlled self sustaining fission chain reaction for the first time) on July 13, 2013 and is expected to be synchronised with grid soon. Five nuclear power reactors viz. Kakrapar Atomic Power Project (KAPP) Units 3&4 (2X700 MW) at Kakrapar, Gujarat, Rajasthan Atomic Power Project (RAPP) Units 7&8 (2X700 MW) at Rawatbhata, Rajasthan; and Prototype Fast Breeder Reactor (PFBR) (500 MW) at Kalpakkam, Tamil Nadu are also under construction.

(b) In the XII Five Year Plan, work is planned to be started on the following new nuclear power plants:

Project	Location	Type	Capacity (MW)
Indigenous Reactors			
GHAVP 1&2	Gorakhpur, Haryana	PHWR	2 x 700
CMAPP 1&2	Chutka, Madhya Pradesh		2 x 700
Mahi Banswara, 1&2	Mahi Banswara, Rajasthan		2 x 700
Kaiga 5&6	Kaiga, Karnataka		2 x 700
FBR 1&2	Kalpakkam, Tamilnadu	FBR	2 x 500
AHWR	Location to be decided	AHWR	300
Reactors with International Co-operation			
KKNPP 3&4	Kudankulam, Tamilnadu	LWR	2 x 1000
JNPP 1&2	Jaitapur, Maharashtra		2 x 1650
Kovvada, 1&2	Kovvada, Andhra Pradesh		2 x 1500
Chhaya Mithi Virdi, 1&2	Chhaya Mithi Virdi, Gujarat		2 x 1100

(c) An Initiative has been launched by the Government for the development of coal based Ultra Mega Power Projects (UMPPs) of about 4,000 MW capacity each under Tariff based competitive bidding. Three UMPPs have already been awarded to developers selected through tariff-based competitive bidding. These are Mundra UMPP in Gujarat, Sasan UMPP in Madhya Pradesh and Tilaiya UMPP in Jharkhand. All five units of Mundra UMPP have already commenced commercial operation. First unit of Sasan UMPP has been commissioned on 31.5.2013 and the remaining five units are scheduled to be commissioned by April 2016. For Tilaiya UMPP, land acquisition and preliminary works are under progress. Other UMPPs planned are Krishnapatnam in Andhra Pradesh, Bedabhal in Odisha and Cheyyor in Tamil Nadu.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus1402.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO.269
TO BE ANSWERED ON 29.08.2013

DEVELOPMENT OF TITANIUM METAL FROM RARE EARTH

*269. SHRI K.N. BALAGOPAL:

Will the PRIME MINISTER be pleased to state:

(a) whether the development of Titanium metal from Rare Earth is successfully formulated in the country and if so the details thereof;

(b) if not, whether Government is taking initiative to develop Titanium Metal production in the country; and

(c) which are the facilities available in India to produce metal forms from Titanium dioxide; alongwith the details including capacity of production/revenue from production, etc.?

ANSWER THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes, Sir.

(b) Does not arise

(c) Titanium Metal is produced from Titanium bearing minerals i.e; ilmenite, leucoxene and rutile. Defence Metallurgical Research Laboratory (DMRL), Hyderabad has installed a pilot plant of 4 ton per annum (tpa) capacity to produce titanium sponge. Department of Space in collaboration with M/s. Kerala Minerals & Metals Ltd. (KMML) has set up a 500 tpa titanium sponge plant at KMML's facility in Chavara, Kerala. The facility available at Mishra Dhatu Nigam Limited (MIDHANI) has the potential to produce 300 tpa metal forms and generates a revenue of `50 to `60 crores per annum towards this component

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rssq269.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2016
TO BE ANSWERED ON 29.08.2013

AGREEMENT WITH AREVA

2016. SHRI SHYAMAL CHAKRABORTY:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that Nuclear Power Corporation of India Limited (NPCIL) is planning to sign an agreement with AREVA and if so, the details thereof; and

(b) whether it is a fact that Government is contemplating to set up nuclear plants with costly imported reactors without a thorough safety review and a detailed techno-economic analysis of India's nuclear energy programme and if so, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Discussions on the techno-commercial offer of M/s AREVA, France for setting up nuclear power plants at Jaitapur in Maharashtra are in progress. Techno- commercial agreement between Nuclear Power Corporation of India Limited (NPCIL) and M/s AREVA would happen only after the satisfactory conclusion of these discussions.

(b) No, Sir. Safety is accorded the utmost priority in all aspects of nuclear power reactors. Nuclear Power Reactors based on foreign cooperation are set up only after their safety is comprehensively reviewed and certified as adequate by the regulatory authority in the vendor country, as well as by the Atomic Energy Regulatory Board (AERB) which is the nuclear sector regulatory authority in India. Such reactors are set up strictly in accordance with the stage-wise clearances accorded by the AERB after thorough reviews. Discussions on the techno-commercial aspects also include the fundamental objective of ensuring a viable tariff in respect of electricity generated by these reactors.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2016.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2017
TO BE ANSWERED ON 29.08.2013

RENAMING OF HIGGS BOSON

2017. SHRI KIRANMAY NANDA:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that renaming of God Particle, "Higgs Boson" is under consideration by the world scientists; and

(b) if so, then, whether Government is making any efforts to ensure that the name of our Indian scientists, Shri Satendra Nath Bose, remains associated with the new name of God Particle; if not, the reasons therefor?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) The name ñHiggs Bosonò comes due to a theory predicted by a scientist named Peter Higgs and a few other European physicists. The experiments are measuring the properties of the newly observed particle and evidence is growing that this particle has all the properties of a state as predicted by the theory of Peter Higgs. Hence, it is called ñHiggs Bosonò. The scientists do not call this as ñGod Particleò which is used only among the general public. Prof. Satyendra Nath Bose gave a theory long time ago in studying the properties of light particle which is then generalised for a whole class of particles. All particles having this type of properties are called Bosons and the theory is jointly due to Professors S.N. Bose and Albert Einstein. The other class of particles is described by a theory of two other famous scientists, Enrico Fermi and Paul Dirac and these particles are called Fermions. These two names ñBosonsò and ñFermionsò will remain in science.

(b) Does not arise in view of (a) above.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2017.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2018
TO BE ANSWERED ON 29.08.2013

REGULATORY INSPECTORS FOR INDUSTRIAL RADIOGRAPHY UNITS

2018. SHRIMATI T. RATNA BAI: SHRI MOHD. ALI KHAN:

Will the PRIME MINISTER be pleased to state:

(a) whether Government has not conducted regulatory inspections for both industrial radiography and radiotherapy units in the country; and

(b) if so, the details thereof and the reasons therefor during the last four years?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b)The Atomic Energy Regulatory Board (AERB), has been conducting the required regulatory inspections as mandated under the applicable provisions of the Atomic Energy (Radiation Protection) Rules, 2004 and associated regulatory documents as applicable to industrial radiography units in the country.

The details of regulatory inspections (RIs) of industrial radiography facilities during the last four financial years are given below:

Description	April 2009 - March 2010	April 2010 - March 2011	April 2011 - March 2012	April 2012 - March 2013	April-2013-June 2013
No. of radiography equipments inspected	115	180	196	300	43

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2018.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2019
TO BE ANSWERED ON 29.08.2013

STATUS OF NUCLEAR LIABILITY ACT

2019. SHRIMATI T. RATNA BAI:
SHRI MOHD. ALI KHAN:

Will the PRIME MINISTER be pleased to state:

(a) the present status of Nuclear Liability Act; and

(b) the benefit so far to the country and the amount spent by Government to United States?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) & (b) The Civil Liability for Nuclear Damage Act, 2010 entered into force with effect from 11.11.2011. The objective of the Civil Liability for Nuclear Damage Act, 2010 is to ensure availability of prompt compensation for the victims in the unlikely event of a nuclear incident.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2019.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2020
TO BE ANSWERED ON 29.08.2013

CERTIFICATE OF SAFE X-RAY FROM AERB

2020. SHRIMATI MAYA SINGH:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that thousands of X-Ray centres, including nursing homes across the country have not applied for a Certificate of safe X-Ray and radiations from Atomic Energy Regulatory Board;

(b) whether the Ministry has any data of the number of X-Ray plants operating without obtaining the required certificate; if so, the details thereof; and

(c) whether the Ministry has developed some mechanism to check and penalise such units, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Yes Sir.

(b)&(c) There are a large number of diagnostic X-ray units/facilities spread across the country and further there is an accelerated growth in their numbers. While the radiation hazard involved in such facilities is generally very low, a series of measures have been undertaken by Atomic Energy Regulatory Board (AERB) to bring such units under radiation safety certification of AERB.

For establishing a more effective regulatory set up for X-ray units, AERB has been pursuing with State Governments for formation of state level Directorates of Radiation Safety (DRS) under their respective Health & Family Welfare Department. AERB has signed MOUs with a total of ten States (Kerala, Mizoram, Madhya Pradesh, Tamil Nadu, Punjab, Chattisgarh, Himachal Pradesh, Gujarat, Maharashtra and Odisha) of which DRS in Kerala and in Mizoram are already functioning. Action towards signing such MOUs with the governments of Uttar Pradesh, Bihar, Andhra Pradesh, Arunachal Pradesh and Tripura are in an advanced

stage. Similar initiatives for the formation of DRS in other States and Union Territories have also been taken by AERB.

Apart from pursuing the formation of DRS with State Governments, AERB has conceptualised an improved regulatory model for the effective regulatory control of such large number of X-ray Units. The strategies being pursued to expand the zone of regulation in this regard include the following:

- Rationalisation of the existing regulations for users in diagnostic X-ray practice, by way of amendments of AERB Safety Code.

- Enhancing regulatory control on manufacturer/supplier with respect to type approvals, over the user. It is a statutory requirement for these stakeholders to guide their customers to obtain AERB license to operate their X-ray equipment.

- Developing an easy and approachable interface for the user in the new web-based system to enable easy filing of applications and issuance of Registration (e-Licensing of radiation applications, e-LORA for faster and on-line processing of licensing applications).

- Awareness programmes among stakeholders and advertisements in the print media as well as on websites for users to buy AERB design approved (type approved) equipment and to get registered with AERB.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2020.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2021
TO BE ANSWERED ON 29.08.2013

ESTABLISHMENT OF ATOMIC POWER STATIONS IN THE COUNTRY

2021. SHRI FAGGAN SINGH KULASTE:

Will the PRIME MINISTER be pleased to state:

(a) the number of atomic power stations established in the country so far, and the number of atomic power plants that are proposed to be set up;

(b) whether Government has formulated any new policy to complete the construction work of these proposed plants; if so, the names of the priority based projects, particularly having provisions for rehabilitation, compensation and Government jobs to compensate loss of land; and

(c) the names of the States where the newly proposed projects are likely to be set up, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Twenty nuclear power reactors with a total installed generation capacity of 4780 MW are currently in operation in India. In addition, seven nuclear power reactors are at various stages of construction/commissioning. Start of work on nineteen new nuclear power reactors is planned in the XII Five Year Plan.

(b) Implementation of the proposed nuclear power projects are in line with Five Year Plan proposals. The Resettlement & Rehabilitation (R&R) in respect of nuclear power projects, where applicable, are in accordance with laws/policies of the respective state.

(c) The new projects during the XII Five Year Plan are planned to be set up in the states of Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu. The details are as under:

(d)

Project	Location	Type	Capacity (MW)
Indigenous Reactors			
Gorakhpur 1&2	Gorakhpur, Haryana	PHWR	2 x 700
Chutka 1&2	Chutka, Madhya Pradesh		2 x 700
Mahi Banswara, 1&2	Mahi Banswara, Rajasthan		2 x 700
Kaiga 5&6	Kaiga, Karnataka		2 x 700
FBR 1&2	Kalpakkam, Tamil Nadu	FBR	2 x 500
AHWR	Location to be decided	AHWR	300
Reactors with International Co-operation			
Kudankulam 3&4	Kudankulam, Tamil Nadu	LWR	2 x 1000
Jaitapur 1&2	Jaitapur, Maharashtra		2 x 1650
Kovvada, 1&2	Kovvada, Andhra Pradesh		2 x 1500
Chhaya Mithi Virdi,	Chhaya Mithi Virdi, Gujarat		2 x 1100

An explanation for the different types of reactors indicated above is given below:-

PHWR : Pressurised Heavy Water Reactors of indigenous design using uranium based fuel

FBR :Fast Breeder Reactors of indigenous design using plutonium and uranium based fuel

AHWR : Advanced Heavy Water Reactor using enriched uranium/plutonium and thorium based fuel

LWR :Light Water Reactors imported from foreign suppliers using enriched uranium based fuel.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2021.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2022
TO BE ANSWERED ON 29.08.2013

ALLOCATION OF POWER SUPPLY FROM KUDANKULAM NUCLEAR POWER PLANT

2022. SHRI A.W. RABI BERNARD:

Will the PRIME MINISTER be pleased to state:

(a) the details of the States to which power generated from the Kudankulam Nuclear Power Plant would be allocated;
(b) whether some States have requested Government for additional allocation of power from the project; if so, the details thereof; and
(c) whether State Government of Tamil Nadu has requested the Union Government to allocate the entire power from the project to Tamil Nadu as an ad hoc measure since the State is facing acute shortage of power; if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) As per existing guidelines for allocation of power, the entire power (2x1000 MW) to be generated from Kudankulam Nuclear Power Plant (KKNPP) has already been allocated on 05.02.2004 amongst the beneficiary States/Union Territory as under:

Beneficiary States/Union Territory	**Power allocated (MW)**
Karnataka	442
Tamil Nadu	925 (includes 10% home state entitlement)
Kerala	266
Puducherry	67

Unallocated 300
TOTAL 2000

(b) A request from the Government of Kerala for allocation of 500 MW power to Kerala to be generated from KKNPP was received in Ministry of Power. Government of Kerala was informed that power had already been allocated from KKNPP (2X1000 MW) amongst the

beneficiary States/Union Territory based on the guidelines for allocation of power from central sector generating stations.

(c) A request from the Government of Tamil Nadu for allocation of entire power to be generated from KKNPP to Tamil Nadu was received in the Ministry of Power. Government of Tamil Nadu was informed that power had already been allocated from KKNPP (2X1000 MW) amongst the beneficiary States/Union Territory including Tamil Nadu based on the guidelines for allocation of power from central sector generating stations. However, 100 MW power from unallocated quota is allocated to Tamil Nadu from the date of commercial operation of unit-1 of KKNPP in addition to 925 MW already allocated on the firm basis to Tamil Nadu from KKNPP.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2022.pdf

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.2023
TO BE ANSWERED ON 29.08.2013

DISPOSAL OF NUCLEAR WASTES

2023. SHRI PIYUSH GOYAL:

Will the PRIME MINISTER be pleased to state:

(a) the manner/method of nuclear waste disposal in the country; and

(b) whether private agencies are involved in this process; if so, the criteria fixed for selecting these agencies?

ANSWER
THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY) :

(a) Management of radioactive waste in Indian context includes all types of radioactive wastes generated from the entire nuclear fuel cycle and also from installations using radionuclides in medicine, industry and research. In the choice of processes and technologies adopted utmost emphasis is given to waste minimisation and volume reduction. The comprehensive radioactive waste management operations are carried out fulfilling all prescribed regulatory requirements. Safe management of nuclear waste has been accorded a high priority right from the inception of our nuclear energy programme. Nuclear waste in gaseous, liquid and solid forms is generated during operation & maintenance activities of nuclear facilities. The processing technologies adopted for management of nuclear waste are summarised below:

(1) Gaseous waste is treated at the source of generation. The techniques used are adsorption on activated charcoal and filtration by high efficiency particulate air filter. The treated gases are then diluted with exhaust air and discharged through tall stack with monitoring.
(2) Liquid waste streams are treated by various techniques, such as filtration, adsorption, chemical treatment, evaporation, ion exchange; reverse osmosis etc., depending upon the nature, volume & radioactivity content. The emphasis is on volume reduction and the concentrate generated therefore is immobilised in inert materials like cement, etc.

(3) The radioactive solid waste generated during operation and maintenance of nuclear facilities are segregated and volume is reduced using various technologies like compaction

and incineration. The solid/solidified waste is packaged in suitable containers to facilitate handling, transport and disposal. Disposal of waste is carried out in specially constructed structures such as stone lined trenches, reinforced concrete trenches and tile holes.

(4) India has adopted closed fuel cycle option, which involves reprocessing and recycling of the spent fuel. During reprocessing, only about two to three percent of the spent fuel becomes waste and the rest is recycled. This waste, called high level waste (HLW), is converted into glass through a process, called vitrification. The vitrified waste is stored in a Solid Storage Surveillance Facility for 30-40 years with natural cooling prior to its disposal in a final disposal facility. The need for a final disposal facility will arise only after three to four decades. This will also provide sufficient time for the reduction in the radioactivity of some of the short-lived radioactive species in the vitrified waste.

(b) No, sir.

*****

http://dae.nic.in/writereaddata/parl/mansoon2013/rsus2023.pdf