

**Enforcement of radiation protection rules**

3079. DR. CHANDAN MITRA: Will the PRIME MINISTER be pleased to state:

- (a) whether thousands of X-ray machines at diagnostic centres and nursing homes are operating illegally across the country especially in Madhya Pradesh; If so, the details thereof along with the reasons therefor;
- (b) the names of the States/Union Territories which have not set up Directorate of Radiation Safety (DRS) for regulation of these centres under the Atomic Energy (Radiation Protection) Rules; and
- (c) the corrective steps taken by Government in the matter for strict enforcement of radiation protection rules?

THE MINISTER OF STATE IN THE DEPARTMENT OF ATOMIC ENERGY (DR. JITENDRA SINGH): (a) It is true that a large number of X-ray facilities have not obtained the necessary regulatory authorisation including those in Madhya Pradesh, in spite of periodical advertisements and display on the website of Atomic Energy Regulatory Board (AERB) about the regulatory requirements of obtaining authorisation from AERB. There are a large number of diagnostic X-ray units/facilities spread across the country and there is an accelerated growth in their numbers. However, the radiation risk/hazard involved in such facilities is generally very low.

(b) AERB has signed MoUs with 11 States (Kerala, Mizoram, Madhya Pradesh, Tamil Nadu, Punjab, Chhattisgarh, Himachal Pradesh, Gujarat, Maharashtra, Odisha and Arunachal Pradesh) of which Directorate of Radiation Safety (DRS) in Kerala and in Mizoram are already functioning .

(c) AERB has taken a series of measures to bring such units under radiation safety certification of AERB, which are detailed below:

- (i) AERB has enhanced regulatory control on manufacturer/supplier by issuance of Licence/Authorisation. It is also mandatory for these stakeholders to guide their customers to obtain AERB license to operate their X-ray equipment. AERB safety code provides the regulations for users in X-ray diagnostic practice.
- (ii) AERB has launched an electronic web-based e-governance system (e-Licensing of radiation applications, e-LORA) to enable easy filing of applications and faster receipt of AERB Licence/ Registration for operation. As on June 30th 2014, the number of X-ray equipment for which Licensing has been initiated is 7630.
- (iii) Periodic advertisements are put out in the print media, as well as on AERB website, for users to buy AERB design approved (type approved) equipment and to obtain the requisite Licence/Registration for operation, from AERB.
- (iv) 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 the Health and Family Welfare Department of the respective State Governments.

- (v) AERB has established Regional Regulatory Centers (RRC) at different locations in the country for decentralisation of regulatory functions.
- (vi) AERB regularly routinely promotes/participates in conferences/public awareness programmes organised by associations such as Indian Radiological Imaging Association (IRIA), Society of Indian Radiographers (SIR), Association of Medical Physicists of India (AMPI) etc., which helps in dissemination of radiation safety and regulatory information.

#### **Shortage of Nuclear fuel**

3080. SHRI AVINASH PANDE: Will the PRIME MINISTER be pleased to state:

(a) whether the operational nuclear power plants of the country are facing a shortage of nuclear fuel, if so, the details thereof; and

(b) whether Government has entered into any agreement with any countries for the supply of Uranium and/or Thorium and the quantity of nuclear fuel imported into India each year?

THE MINISTER OF STATE IN THE DEPARTMENT OF ATOMIC ENERGY (DR. JITENDRA SINGH): (a) Yes, Sir. The country has 20 nuclear power reactors under operation with an installed generating capacity of 4780 MWe. Under separation plan, ten reactors are currently placed under IAEA safeguards and are eligible for imported fuel. These reactors are RAPS 1 to 6 located at Rawatbhata, Rajasthan; KAPS 1 and 2 at Kakrapar, Gujarat and TAPS 1 and 2 at Tarapur, Maharashtra. These reactors normally operate at their full capacity. RAPS-1 is under extended shutdown for techno-economic assessment. In addition, two more reactors, Kudankulam (KKNPP) Unit 1 and 2, set up with the international cooperation with Russian Federation, at Kudankulam, in Tamil Nadu are also under IAEA safeguard.

Ten nuclear power reactors *viz.*, KGS 1 to 4 located at Kaiga, Karnataka; NAPS 1 and 2 at Narora, Uttar Pradesh; MAPS 1 and 2 at Kalpakkam, Tamil Nadu; and TAPS 3 and 4 at Tarapur, Maharashtra continue to use uranium sourced within the country. Due to a mismatch between demand and supply of domestic Uranium, the total power generated by these reactors is generally lower than their gross installed capacity of 2,840 MWe. So far, 2,11,473 tonne of  $U_3O_8$  equivalent to 1,79,329 tonne of Uranium has been established by Atomic Minerals Directorate for Exploration and Research (AMD) in various States of India. Following extensive work for exploration of Uranium in the country, the identified *in-situ* reserves of uranium in the country have been progressing.

(b) Yes, Sir. Consequent upon India signing the Civil Nuclear Cooperation Agreement with United States of America on 10.10.2008, the Department of Atomic Energy (DAE) has been importing Uranium ore to supply fuel for Nuclear Reactors under IAEA