

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 4364**  
TO BE ANSWERED ON 21.03.2018

**RADIOACTIVE WASTE AND NUCLEAR SMUGGLING**

**4364. SHRIMATI ANJU BALA:  
SHRI TEJ PRATAP SINGH YADAV:**

Will the PRIME MINISTER be pleased to state:

- (a) whether incidents of exposure to radioactive waste causing public health hazard at large level in the country have been reported and if so, the details thereof;
- (b) whether guidelines to set up Chemical Biological Radiation and Nuclear Cell in hospitals are not followed and if so, the reasons therefor;
- (c) whether lack of container security poses threat of nuclear smuggling in the country and if so, the details thereof;
- (d) whether International Panel on Fissile Materials has reported that liquid sodium cooled Fast Breeder Reactors (FBRs) experienced sodium leaks resulting in fires and if so, the details thereof;
- (e) whether the Department of Atomic Energy (DAE) has developed a low-cost handheld 12-channel Tele-ECG machine which records all 12 ECG channels simultaneously and if so, the details thereof; and
- (f) the steps taken by the Government for application of atomic energy technology in social welfare ?

**ANSWER**

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND  
PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH):

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- (a) No incidents have been reported so far.
- (b) No please. The guide lines issued by National Disaster Management Authority are being followed. National Disaster Management Plan-2016 (NDMP-2016) issued by NDMA provides guidelines for Capacity Development in the area of Nuclear and Radiological Emergencies. NDMP-2016 stipulates establishment of tertiary care hospitals for treatment of radiation injuries and establishment of primary and secondary care hospitals of adequate capacity at selected cities.
- (c) No please. Major sea ports in the country are equipped with radiation detection equipment's (RDEs) for scanning presence of any radioactive material containers. Further India has set up at the national level an institutional mechanism called a

Counter Nuclear Smuggling Team (CNST) to devise a coordinated multi-agency approach to deal with the threat of individuals or group of individuals acquiring nuclear or radioactive material for malicious purposes.

- (d) The International Panel on Fissile Materials in their research report titled “Fast Breeder Reactor Programs: History and Status” released in Feb 2010 mentions various incidents of sodium leaks in international liquid sodium cooled fast breeder reactors (Russia, France, Japan, United Kingdom, India) based on data available in published literature. In all the cases, the resulting sodium fire was extinguished by plant operators using the sodium fire-extinguishing systems provided and these incidents did not affect reactor safety. In fast breeder reactors, diverse leak detection systems are provided (two different methods) for all sodium pipelines and equipment. Emphasis is placed on early detection of sodium leaks by providing sensitive instrumentation to detect and alert the operator for taking necessary safety action. Dry-chemical powder / inerting with inert gas is used to extinguish sodium fire.
- (e) Bhabha Atomic Research Centre (BARC) has developed Handheld 12-Channel Tele-ECG, which is a portable, light weight Mobile Controlled ECG machine and capable of simultaneous acquiring all 12 channels of ECG in Real time. The machine can be connected to Mobile/PC via Bluetooth and the report is generated in the form of an image that can be sent to the expert via MMS or internet. This has provided virtual instantaneous ECG diagnostic service to a villager at his home/village thus, proving the philosophy – **“Cardiac Care – Just a Click Away”**. This saves crucial time, which is otherwise lost in transporting the patient to the nearest cardiac care center.
- (f) Department of Atomic Energy and Bhabha Atomic Research Centre (BARC) in particular has significantly contributed for application of atomic energy for several societal applications. Some of the areas are mentioned below,
- i) Agriculture by developing high yielding varieties of rice, pulses and oilseeds using nuclear techniques.
  - ii) Promoting food preservation through irradiation.
  - iii) NISARGRUNA technology for disposal of solid biodegradable waste degradation which has been commercialized and deployed on fairly large scale.
  - iv) Municipal waste Sludge Hygienisation through radiation.
  - v) Water resource identification and water purification.
  - vi) Health Care.

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