GOVERNMENT OF INDIA
WATER RESOURCES
LOK SABHA

UNSTARRED QUESTION NO:2782
ANSWERED ON:18.08.2011
NUCLEAR CONTAMINATION OF WATER
Joshi Shri Pralhad Venkatesh

Will the Minister of WATER RESOURCES be pleased to state:

(a) whether adequate facilities are available in the country to test for nuclear contamination of water;

(b) if so, the details thereof;

(c) whether there is any data on the extent of nuclear contamination in water resources of the country; and

(d) the steps being taken to combat nuclear contamination of water bodies in the country?

Answer

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES & MINORITY AFFAIRS (SHRI VINCENT H. PALA)

(a) & (b) Yes sir, facilities, as detailed below, are available in the country to test for nuclear contamination of water:

i. Bhabha Atomic Research Centre (BARC) under the Department of Atomic Energy (DAE) has radiation measuring facilities. Environmental Survey Laboratories under Bhabha Atomic Research Centre are installed around all nuclear power stations in the country. They are well equipped to estimate extremely low levels of radioactivity, much lower than the permissible limits for drinking water.

ii. National Geophysical Research Institute (NGRI) has low level liquid scintillation counters which are mainly being used to measure environmental radiocarbon and tritium for hydrological studies.

iii. National Institute of Hydrology (NIH), Roorkee has laboratory facilities to monitor nuclear/radiological contamination in water which may occur due to leakage or accident at the Nuclear Installations in the country. The Institute also has a portable instrument that can be used to measure radiological contamination produced due to in-situ Uranium, Thorium and Radium.

(c) & (d) i. Central Ground Water Board (CGWB) has informed that instances of Uranium contamination in ground water have been reported by Department of Drinking Water Supply & Sanitation, Government of Punjab from isolated pockets in Barnala, Bhatinda, Faridkot, Ferozepur, Ludhiana, Moga and Sangrur districts in Punjab. Further, a study was conducted by CGWB to ascertain Radon contamination in and around Bangalore city (as reported by the print media). As per the study, Radon concentrations in excess of maximum permissible limit of 11.1 Becquerel per litre (as prescribed by Bureau of Indian Standards) have been reported from a few wells in and around Bangalore city.

ii. NIH has informed that no nuclear contamination has been observed beyond the permissible limit in any river and groundwater samples analysed so far by the Institute from different parts of the country.

iii. It has been reported by Department of Atomic Energy (DAE) that there is no incident of any unacceptable drinking water contamination in public domain around any atomic power station. DAE has a systematic environmental monitoring program of all power station sites covering all drinking water sources used by general public, such as surface water, borewells and open wells upto 30 km. A pre-operational environmental monitoring will be carried out well before the commissioning of the power plant to estimate the baseline pre-operational radioactivity levels in the environment. During the operational stage of the power plant, systematic environmental monitoring will be carried out to ensure that there is no unacceptable build up of radioactivity in the environment due to the operation of the power plant. The environmental monitoring around Nuclear Power Stations in India has clearly indicated that there is no unacceptable nuclear contamination in the drinking water in public domain around the nuclear power plants.

iv. A defense-in-depth philosophy is adapted during the design, construction and operation of nuclear installations. Permissible limits of radio-nuclides in liquid effluents, being discharged to the water body are prescribed by Atomic Energy Regulatory Board to ensure that the released radioactivity will not lead to any unacceptable hazard to general public or environment. During the operation of the nuclear power plant, liquid effluent generated in a nuclear power plant is treated and monitored before releasing to the water body to ensure that concentration in the effluent is well within the permissible regulatory limits. Environmental survey laboratories are installed at all power station sites which monitor the environment, including water bodies, and ensures that there is no hazard to general public or environment.