

**GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:3831

ANSWERED ON:06.08.2014

TRITIUM LEAKAGE

Mohan Shri P. C.

Will the Minister of ATOMIC ENERGY be pleased to state:

- (a) whether the Government has received any report regarding Tritium leakage from nuclear establishments;
- (b) if so, the details thereof;
- (c) the permissible limit in percentage of radiation leakage and the measures taken to control the leakage;
- (d) the number of labourers/workers affected by radiation leakage in all nuclear power plants;
- (e) whether the nuclear plants in India are taking steps to prevent Tritium leakage; and
- (f) if so, the details thereof?

Answer

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

(a)&(b) There has been no incident of radioactivity leakage to the environment beyond the authorised limits from any Nuclear Power Plant (NPP) during the last ten years. With regard to events involving spillage / leakage of radioactivity within the plant premises, NPPs have systems for containment/recovery of radioactive material so that there is no significant environmental impact. AERB has issued the criteria for reporting of significant events at NPPs, which include events of leakage of radioactive material within plant premises and to the environment. These events are published in the Annual Reports of AERB which are available on website of AERB.

(c) The limits on disposal of radioactive waste from Nuclear Power Plants (NPPs) are prescribed in the Authorisation for Safe Disposal / Transfer of Radioactive Waste, issued under Atomic Energy (Safe Disposal of Radioactive Wastes) Rules 1987 (GSR-125). These authorisations issued under GSR-125 are valid for three years, after which these are renewed based on the request from the facility. The limits on radioactive discharges from NPPs are also prescribed in the Technical Specification for operation of these plants.

The liquid and gaseous wastes discharged to the environment from the operating units are only a small fraction of the prescribed Technical Specification limits. In its annual reports, AERB regularly brings out the radioactive effluents discharge to the environment from the nuclear power plants. The annual average tritium activity release from nuclear power stations has been about 16% of the limit as stipulated by AERB.

(d) The radiation exposure of all the persons working in Nuclear Power Plants is monitored and recorded. The radiation dose consumed by the workers due to incidents of radiation leaks are accounted for in the annual dose of the workers.

The adherence to the AERB prescribed limits for radiation workers is ensured through periodical regulatory safety review and regulatory inspections carried out by AERB. The incidents of workers including contract workers exceeding the prescribed dose limits, if any, are published in the annual report of AERB. No occupational worker exceeded the prescribed limit while working at NPPs during the last year.

Any exposure above the prescribed dose limit is investigated by Committees formed by the Nuclear Power Plants as well as by AERB to take further corrective steps in this regard.

(e)&(f) Low level liquid waste generated from nuclear power plants are discharged to the environment after suitable treatment ensuring compliance with the regulatory limit. The treatment system essentially comprises chemical treatment, evaporation, ion exchange and filtration.