GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA

STARRED QUESTION NO:203
ANSWERED ON:11.03.2015
DISPOSAL OF SPENT FUEL
Singh Deo Shri Kalikesh Narayan

Will the Minister of ATOMIC ENERGY be pleased to state:

(a) whether spent fuel generated from nuclear power plants has any repercussions on environment and if so, the details thereof;

(b) the manner in which reprocessed/recycled nuclear waste is being used;

(c) the details of rules/regulations governing the disposal of radioactive waste;

(d) the extent to which these rules/regulations are compliant with International norms; and

(e) whether there is any contingency plan for Level 7 accident arising out of reprocessing/ recycling of spent fuel 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 (DR.JITENDRA SINGH):

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

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO.203 FOR ANSWER ON 11.03.2015 BY SHRI KALIKESH N. SINGH DEO REGARDING DISPOSAL OF SPENT FUEL.

(a) No, Sir. There are no environmental repercussions due to the spent fuel generated from nuclear power plants in India.

(b) As a policy, India has adopted a closed fuel cycle, where the spent fuel is regarded as a resource material and thus no spent fuel is disposed off. All the spent fuel is re-processed to recover useful fissile and fertile materials to recycle back in the reactor as a fuel. For the spent fuel from indigenous Pressurised Heavy Water Reactors (PHWRs) the balance, other than fissile and fertile materials, amounts to barely about half percent of the original mass of the nuclear fuel. This too is converted and contained in stable glass form through a process of vitrification. The recovered fissile and fertile material in the form of Uranium and Plutonium is used as nuclear fuel in fast breeder reactors. Further, recently Bhabha Atomic Research Centre (BARC) has successfully developed and demonstrated technologies for separation of useful radioactive isotopes from even the small quantity of residual matter. These useful fission products have societal applications. These useful fission products, separated from waste for their use in irradiators, have various applications in healthcare, agriculture and industry.

(c) The storage and disposal of radioactive wastes in the country is governed by the provisions of the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987 framed under the Atomic Energy Act, 1962. Atomic Energy Regulatory Board (AERB) has been entrusted with the responsibility for enforcement of these rules in the facilities regulated by it. AERB has specified the requirements for safe management of radioactive wastes in the form of Safety Code (AERB/SC/RW) and has issued several guides thereunder providing guidance on various aspects to meet the requirements of the Code.

(d) These rules and regulations are fully in line with the international norms.

(e) Normally, International Nuclear Event Scale (INES) level 7 accident is not envisaged in a reprocessing plant. However, as a measure of abundant precaution, emergency response plans are drawn up to ensure that the plant management is always prepared to meet the unlikely occurrence of abnormal or accident situations at such facilities.