Radioactive Capsule Lost & Found in Australia

A highly radioactive capsule was lost in Australia along a 1400 km highway in the Western Australian Desert. The capsule fell down the truck which was transporting it as a part of a density gauge. The capsule however was eventually found. Know more about this development in this article. This is relevant for the UPSC exam from a radioactive waste management perspective.

Radioactive Capsule Missing in Australia - Full Story

The capsule that contained caesium 137 was the size of a fingernail and it was being transported to a mine in Pilibara, a region which is known for its rich iron ore reserves. The capsule was part of a density gauge which is used to measure the density of iron ore in the mines. It was lost between 12th and 16th January, however, the package containing it was not opened until 25th January when it was found that the density gauge which had the capsule had broken apart and the capsule was now missing. The state police were informed of this on the same day. Finally, after extensive search missions by many authorities, the capsule was found on 31st January.

The reason for such a panic situation was that exposure to even trace amounts of caesium 137 can cause acute sickness in human beings. It is comparable to getting 10 x-rays in just an hour and it is also equivalent to the total radiation that we absorb naturally throughout the year.

Precedents in India

A similar case also took place in India in April 2010 in the Mayapuri scrapyard. An unused Gamma irradiator, which is a machine used for sterilization or decontamination, contains radioactive Cobalt 60. It was auctioned by Delhi University in February 2010 after not being used for 25 years. It was bought from Canada in 1970, but the chemistry department of the universities stopped using the machine in 1985. The machine was then sold to the Mayapuri dealers without any radioactive content warning and the equipment was eventually broken without any safety measures. This led to the death of one person and also caused sickness amongst many others.

Eventually, the Atomic Energy Regulatory Board (AERB) issued a show cause notice to Delhi University as to why they had not disposed of the machine according to the radioactive waste rules of the country. On not getting a suitable reply from the university in September 2010 the AERB cancelled Delhi University's permit to use any radioactive materials in its laboratories.

Radioactive Waste Management in India

India published its radioactive waste management rules in the year 1987.

- There exist separate rules for power plants, mines, medical facilities, industries and research facilities because every facility uses radioactive products for different purposes and that is why there needs to be a different way in which such radioactive waste that is generated needs to be dealt with.
- The Atomic Energy Regulatory Board (AERB) authorises the waste disposal of radioactive waste under the Atomic Energy (Safe Disposal of Radioactive Waste) Rules 1987.
- The AERB also evaluates the waste management abilities of the various facilities and assesses whether they are following all the rules that are required to be followed while using radioactive products, as per its 'Safety Codes and Guidelines'.

Atomic Energy Regulatory Board (AERB)

- The Atomic Energy Regulatory Board was constituted in the year 1983 by a presidential order under the Atomic Energy Act of 1962, on the recommendations of the Karkhanawala committee.
- It was established to undertake various regulatory and safety-related functions under the Atomic Energy Act.
- The body derives its authority from various rules and notifications that have been promulgated under the Atomic Energy Act and the Environment Protection Act, 1986.
- It is a regulatory body that ensures that all the institutes and authorities that are using radioactive products in the country are compliant with all the rules.
- Apart from that it also plays an advisory role in giving advice to the Government of India related to atomic use in the country.
- Additionally, it also undertakes international cooperation both in multilateral forums as well as bilaterally on nuclear issues on India's behalf.
- It represents India in the IAEA, OECD and various other international forums and international committees established to regulate the peaceful use of atomic energy across the world.
- Apart from that it also facilitates any import and export of radioactive substances according to the international standard set by the IAEA.