Radioactive Pollution

Introduction- Among the various other types of pollution, radioactive pollution is one of the most serious. In this article, we shall explore how radioactive pollution impacts human life as well as its repercussions on the environment.

Radioactive Pollution- Radioactive contamination is defined as the deposition or introduction of radioactive substances into the environment, where their presence is unintended, or the levels of radioactivity are undesirable. Such type of pollution is harmful to life due to the emission of ionizing radiation. This type of radiation is potent enough to cause damage to tissues and DNA in genes.

Causes of radioactive pollution - Radioactivity can occur in one of two ways:

A. **Naturally occurring radioactivity**- Natural radioactivity, as the name suggests, occurs naturally in our environment. Some radioactive elements such as uranium and thorium are present in rocks and soil, albeit in trace quantities. Interestingly, humans and all other living organisms contain nuclides such as carbon-14, which are created by cosmic rays.
B. **Man-made radioactivity-** Man-made radioactivity is the result of nuclear weapon discharge or a nuclear reactor containment breach. In such scenarios, all living organisms in the vicinity of the nuclear event will become contaminated by fission products and remnants of nuclear fuel. This can be in the form of radioactive dust or even particles that are found on various surfaces.

Examples of Radioactive Pollution- One of the most infamous cases that resulted in radioactive pollution was the Chernobyl disaster. Other examples include:

a. Fukushima Daiichi Nuclear Disaster- Following a major earthquake, **a 15-metre tsunami disabled the power supply and cooling of three Fukushima Daiichi reactors**, causing a nuclear accident beginning on 11 March 2011. All three cores largely melted in the first three days. Nobody died as a direct result of the Fukushima nuclear disaster. However, in 2018 one worker in charge of measuring radiation at the plant died of lung cancer caused by radiation exposure. In addition, there have been **more than 2,000** disaster-related deaths.
b. **Nuclear fallout (after atmospheric nuclear explosions)-** What happened to the nuclear fallout after the explosion. The Chernobyl disaster was a nuclear accident that occurred on 26 April 1986 at the No. 4 reactor in the Chernobyl Nuclear Power Plant, near the city of Pripyat in the north of the Ukrainian SSR in the Soviet Union.Radioactive material from the nuclear device mixes with the vaporized material in the mushroom cloud. As this vaporized radioactive material cools, it becomes condensed and forms particles, such as dust. The condensed radioactive material then falls back to the earth; this is what is known

as fallout. The official death toll directly attributed to Chernobyl that is recognized by the international community is just **31 people** with the UN saying it could be 50. However, hundreds of thousands of “liquidators” were sent in to put out the fire at the nuclear power plant and clean up the Chernobyl site afterwards

c. **Nuclear attack**- The two bombings killed **between 129,000 and 226,000** people, most of whom were civilians, and remain the only use of nuclear weapons in an armed conflict. Japan surrendered to the Allies on 15 August, six days after the bombing of Nagasaki and the Soviet Union's declaration of war against Japan.
d. Effects of radioactive Pollution- Such type of pollution results in the emission of ionizing radiation. This type of radiation can cause damage to tissues and DNA in genes.