

Nuclear Pollution : their Control measure.

The term 'pollution' is derived from Latin word 'Pollutio' from polluo, (Pol = Per or through + luere = to wash) or to make dirty.

Pollution is the unfavourable alteration of our environment, largely because of human activities.

Pollution may be defined as matter in the wrong place & "anything released into the environment which degrades its quality".

As to Odum; E.P. Pollution is an undesirable alteration in the physical, chemical or biological characteristics of our air, land and water that harmfully affect the human life & the desirable species & that may waste & deteriorate our raw material resources.

National Academy of Science, U.S.A (1966) defined pollution "as pollution is an

undesirable change in physical, chemical & biological characteristics of air, water and soil that may harmful affect human, animals & plant life, the industrial progress,

living conditions & cultural assets.

Types of Pollution:-

- Pollution - is of following type.
- (1) Air Pollution -
 - (2) Water " -
 - (3) Noise " -
 - (4) Soil " -
 - (5) Nuclear " -
 - (6) Mercury " - etc.

Nuclear Pollution

Nuclear pollution is a significant source of environmental pollution. It may be natural & Artificial & Anthropogenic. The nuclear pollution is caused by different types of radiations. ~~such~~ which come from UV, visible cosmic rays and microwave radiation. The biggest hazard comes from X-rays. ~~the~~ the radiation may be ionizing & non-ionizing. The ionizing radiations come from natural resources. The radioisotopes persist much longer in the environment.

The substance which cause pollution may called pollutants. In nuclear pollution, pollutants may be —

- a) Ionizing radiations
- b) Non-ionizing Radiations

a) ~~the~~ Ionizing Radiations — It include X-rays, gamma rays, α & β particles

It causes injury to the living tissue. Hence, ⁽³⁾ called high energy radiation. These are capable of removing electrons from atoms & attach them to other atoms atoms, hence called ionizing radiation.

(b) non-ionizing - It includes heat, light, radio waves, that carry enough energy to excite atoms but not enough to produce ions are called non-ionizing radiation. The UV-rays are the important example of non-ionizing radiation.

The radioactive or fallout is the dust which fell on the earth after atomic explosions. It is suspended at a height of about 10-15 km above the earth surface & may come down to soil and water in the form of radioactive rain.

Radioactive fallout causing radiation pollution is of two types -

(A) Early fall out -

(B) Delayed fall out -

(A) Early fallout -

If the nuclear explosion is at a very low altitude, it sucks up large

quantities of soil & water affecting severely all the living biota.

(B) Delayed fall out -

If the nuclear explosion occurs at a high altitude. It sucks little dust & water. It is also known as worldwide fallout.

Definition of Nuclear pollution

Nuclear pollution is pollution created by mishandling and inappropriate storage of spent nuclear fuel rods, and pieces of protective clothing & tools that have become contaminated and by insecure transportation of highly radioactive material over long distances to a processing plant.

Causes

i) Intense nuclear energy from radioactive fuel is used to heat water to steam, small amounts of radiation are released during this process into water which may then dispose off indiscriminately causing nuclear pollution.

~~The radio-active elements are released through various sources and nuclear pollution~~

- i) Nuclear accidents from nuclear energy generation plants
- ii) The use of nuclear weapons as weapons of mass destruction (WMD)
- iii) Use of radio isotopes,
- iv) Mining
- v) Spillage of radioactive chemicals
- vi) Tests on radiation
- vii) Genetic mutations
- viii) Diseases