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Assessment of whole-body and collective dose of occupational radiation exposure in a Gamma Irradiation Facility (2009-2018)

Individuals working in both radiological and nuclear facilities are often exposed to sources of ionizing radiation resulting in some level of occupational hazards. Appropriate levels of radiation protection of workers are essential for the safe and justified use of radiation, radioactive material and nuclear energy. Occupational exposure to radiation workers in a Gamma Irradiation Facility has been analysed for a 10 year period between 2009 and 2018. The data from 2009-2018 were used to compute the average annual effective and the annual collective dose. The results show that the total deep dose, Hp(10), received by the radiation workers for the ten year period ranged between 10.21 mSv to 16.05 mSv with a mean of 13.97 mSv. It also showed that the average annual effective dose ranged between 0.65±0.04 mSv to 1.98±0.30 mSv with a mean of 1.51±0.42 mSv. The Collective dose ranged between 10.92 man.Sv to 33.66 man.Sv with a mean of 23.76±8.32 man.Sv. This shows that the risk due to radiation exposure of the workers is within the recommended and regulatory limits.

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