

Detection of radioactive materials in the air in the girls' compound in the Mahalia.

Layla Muhzari, Huoda Malki, Haifaa Magrazhy

*Physics Department; Science College; Jazan University.
Jazan, Saudi Arabia*

Abstract:

Radon is a noble, radioactive gas produced by the radioactive decay of radium from the dissolution of uranium. Radon is the second most common cause of lung cancer after smoking. In this current work, the concentration of radon gas was measured in the internal buildings of the university compound for female students in a Mahalia. Internal radon measurements were performed with CR-39 nuclear pathway detectors. The results showed that the average radon concentration was 312.45 ± 76.43 Bq/m³ in the different floors, while the average concentration was 303.90 ± 44.00 Bq/m³ in the rooms. All concentration values were close to the upper limit of the internationally permissible level set by the International Commission on Radiological Protection ICRP at 200-400Bq/m³ [1]. The average of annual effective radiation dose (AED) on the different floors is 6.38 ± 1.65 mSv/yr, while in the rooms is 6.22 ± 1.24 mSv/yr. The results show that all values are within the recommended limits of ICRP.

Keywords: Concentration of Radon gas, SSNTDs (CR-39), the girls' compound in a Mahalia, annual effective dose (AED).