

**International Conference on Occupational Radiation Protection:
Strengthening Radiation Protection of Workers –Twenty Years of Progress
and the Way Forward**

Contribution ID: 64

Type: **Poster**

Occupational Radiation Protection in the Workplaces Involving Exposure to Naturally Occurring Radioactive material, Radon and Cosmic Rays in Nigeria

Occupational Radiation Protection in the Workplaces Involving Exposure to Naturally Occurring Radioactive material, Radon and Cosmic Rays

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Human exposures to ionizing radiation in daily life come from both natural sources - such as naturally occurring radioactive materials (NORM) in soil, water, vegetation, and cosmic rays, as well as anthropogenic sources - such as artificial radionuclides, X-ray, and other medical devices. The Nigerian Nuclear Regulatory Authority (NNRA) is the competent National Authority that is responsible for protection of health of all users, handlers and the public from the harmful effects of ionizing radiation in Nigeria. Accordingly, the NNRA has instituted a robust dose monitoring programme for occupational exposures of all users and handlers of ionizing radiation sources to ensure that established dose limits are not exceeded. The personnel dose monitoring programme requires a mandatory systematic assessment of doses to every radiation worker by an NNRA approved dosimetry service provider (DSP), as a necessary step to guarantee occupational radiation protection. Following the recent policy of the Nigerian Government to diversify her economy to explore the untapped potentials in the mining sector and reinvigoration of the aviation sector, a new scope of challenge of occupational exposure due to NORM in the mining sector and exposure of airline crews and frequent fliers to cosmic rays was identified. Besides, the use of earthen materials to build public buildings and homes, along with building on rocky regions posed another challenge of exposures due to radon in the workplaces and homes. In response to the challenge, the NNRA reviewed its principal Regulations –the Nigeria Basic Ionizing Radiation Regulations, in line with the requirements in International Atomic Energy Agency (IAEA) General Safety Requirements GSR Part 3 to cover the aspects occupational radiation protection in existing exposure situations whereby workers may be exposed to existing sources of radiation such as NORM, radon and cosmic rays. Thus, adequate requirements have been laid out to take care of the protection of workers and workplaces in an existing exposure situation, covering exposures due to contamination of areas by residual radioactive material from legacy sources, NORM, and for monitoring airline crew for possible exposures due to cosmic radiations of the celestial bodies. Moreso, a National Dose registry (NDR) has been established for filing of all records of occupational doses incurred by classified workers throughout their period of work with ionizing radiation to keep track of individual doses so that established dose limits would not be exceeded.

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Session Classification: Session 7. Occupational radiation protection in the workplaces involving exposure to naturally occurring radioactive material, radon, and cosmic rays

Track Classification: 5. Occupational radiation protection in the workplaces involving exposure to naturally occurring radioactive material, radon and cosmic rays