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Occupational Exposure Levels and Dose Registries (The Nigerian Experience) - by Okoye Valentine Ikemefuna

International Conference on Occupational Radiation Protection: Strengthening Radiation Protection of Workers - Twenty Years of Progress and the Way Forward: Occupational Exposure Levels and Dose Registries (The Nigerian Experience) - by Okoye Valentine Ikemefuna

A remarkable distinction between the Public and occupationally exposed individuals alludes to the fact that the latter expectedly undergo personal monitoring that provides a good estimate of radiation dose received in the course of work. Since exposure to ionizing radiation in the workplace transcends exposure to only artificial radiation sources and encompasses exposure to naturally occurring radioactive materials (NORMs) as well as technologically enhanced radioactive materials (Te-NORMs), the demands on occupational radiation protection are getting increasingly complex. Excluding natural background ionizing radiation, any additional exposure from the workplace, if justified, is expected to conform to the "As Low as Reasonably Achievable (ALARA)"principle while taking into account the recommended occupational dose limits and applicable dose constraints. Occupational exposure levels, which cut across planned, emergency, and existing exposure situations, will potentially have different values in the different situations but the common overarching theme is the application of radiation protection optimization principle in all scenarios.

The nexus between an effective dose registry and optimization of radiation protection should be maximally exploited to the benefit of occupationally exposed individuals. Dose registries serve as repositories for dose records of radiation workers and prove to be a useful tool for decision making, research and epidemiological studies; hence its importance cannot be overemphasized. This robust computerized way of recording and maintaining occupational dose records incorporates the capacity to evaluate, analyze and track occupational dose histories in all three exposure situations, proffering feasible solutions for associated long-standing challenges with itinerant workers. Beaming the searchlight on Nigeria and its ever-growing applications of nuclear energy, the Nigerian Nuclear Regulatory Authority (NNRA), with the aid input data supplied by accredited dosimetry service providers, has painstakingly established a secure National Dose register (NDR), which manages occupational effective dose exposure in planned exposure situations in the interim, with bias to external radiation exposure only. This paper highlights the landmarks achieved regarding occupational radiation protection since the advent of Nigeria's NDR (for example; provision of data for UNSCEAR occupational exposure global survey, effective regulatory oversight based on observed trends etc) and proposes future applications of the NDR as a veritable instrument for optimization of occupational radiation protection in authorized practices for all exposure situations as well as the effective use of workplace monitoring of occupational exposure levels for congruence with data supplied from the NDR.

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