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Implementation of Radiation Protection Program on Workers in the NORM Facilities

All minerals and raw materials contain radionuclides of natural origin. The most important for the purposes of radiation protection are the radionuclides in the U-238 and Th-232 decay series. For most human activities involving minerals and raw materials, the levels of exposure to these radionuclides are not significantly greater than normal background levels and are not of concern for radiation protection. However, certain work activities can give rise to significantly enhanced exposures that may need to be controlled by regulation. Material giving rise to these enhanced exposures has become known as naturally occurring radioactive material (NORM). Naturally-occurring radioactive material (NORM) is the term used to describe materials containing radionuclides that exist in the natural environment.

NORM is widespread in sands, clays, soils and rocks, and many ores and minerals, commodities, products, by-products, recycled residues, and devices used by humans. NORM is widely distributed, and gives rise to a natural radiation background that varies by approximately two orders of magnitude over the Earth, and even more if localised mineral deposits are taken into account. Long-lived radioactive elements such as uranium, thorium and potassium and any of their decay products, such as radium and radon are examples of NORM.

Occupational exposure to ionizing radiation can occur in a range of industries, in mining and milling, in medical institutions, in educational and research establishments and in nuclear fuel cycle facilities.

Workers can be exposed either to artificial radiation or naturally occurring radioactive material. To protect them against such an exposure, some concrete steps can be taken. These include regular monitoring, protective equipment, or countermeasures such as shielding. Training, information exchange and consistent health surveillance are also important factors for an efficient occupational radiation protection regime. Any of these responsibilities must clearly be assigned to the worker, his contractor or employer, or the operator of the facility. Here in this paper we will implementation of radiation protection program and safety on the workers in the NORM facilities.

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