Contribution ID: **105** Type: **POSTER**

Demonstrating Safety through Environmental Monitoring around Nuclear Installations in Pakistan

Nuclear Installations may release radioactivity into the environment under normal operation in the form of gaseous or liquid effluent. Monitoring of environmental and food samples in the vicinity of these installations during operational stage and estimation of radiation doses to public is therefore imperative to ascertain the impact of plant operations on public health and environment. Accordingly, samples of soil, water, aerosol, food etc. are collected and analyzed on gross alpha/beta counter, gamma spectrometry system and liquid scintillation analyzer to quantify the potential anthropogenic radionuclides released into the environment. The analysis results reveal the minor traces of 137Cs in few soil samples which could be attributed to global fallout due to past nuclear accidents. Moreover, Tritium is found in few water samples and activity concentration values are well below the guideline level of 10,000 Bq/L for drinking water, specified in PNRA Regulations-PAK/904 (Rev.01). In addition, gross alpha and beta activity concentration values in water samples are found well below the WHO recommended screening criteria for gross alpha and beta in drinking water samples. The operator's environmental monitoring data is also verified through this study. It is concluded that environmental protection is ensured during operational stage of Nuclear Installations in Pakistan.

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Track Classification: Track 5 - Practical experiences in integrating safety and sustainable development