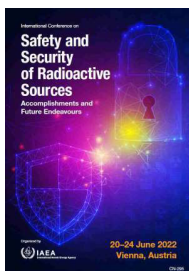


International Conference on Safety and Security of Radioactive Sources: Accomplishments and Future Endeavours (CN-295)



Contribution ID: 227

Type: Poster

Nuclear gauge application in a road Construction industry in Ethiopia

Wednesday, 22 June 2022 16:15 (15 minutes)

ABSTRACT

The application of ionizing radiation is an important technique for a wide variety of industries in many cases. One of these applications is portable density/moisture gauges. Portable density gauge has been used in industries such as construction, civil engineering, agriculture, and the like areas to perform in-situ measurements such as soil moisture or asphalt density. Moisture/density gauging is a form of non-destructive testing that eliminates the need to take core samples. Effective control of compaction of soil and stone layers is an important factor in the construction of roads and other types of foundations for civil engineering structures. The knowledge of materials density and moisture is very important for the evaluation of the degree of compactness. The other alternative methods to perform the same tasks have their own limitations and problems. To solve these problems, a nuclear technique has been introduced as a quicker and easier way of measuring the density and moisture of construction materials. The technique can determine both the density and moisture of materials for construction control at the worksite. The simplicity, speed, and nondestructive nature offer a great advantage for quality control. However, ensuring safety in the use of nuclear gauge and security of the gauge is of paramount importance for the protection of people and the environment from any associated radiation risks. This paper provides an overview of nuclear gauge application in road construction and the challenge of safety and security measures that exists at the companies using this source in Ethiopia.

Country OR Intl. Organization

Ethiopia

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Session Classification: Poster Session 2

Track Classification: 10. Safety and security assessments of facilities and activities;