

Title (en)

METHOD, SYSTEM AND DEVICE FOR DETERMINING AN AMOUNT OF FISSILE MATERIAL IN A FACILITY

Title (de)

VERFAHREN, SYSTEM UND VORRICHTUNG ZUR BESTIMMUNG EINER MENGE SPALTBAREN MATERIALS IN EINER ANLAGE

Title (fr)

PROCÉDÉ, SYSTÈME ET DISPOSITIF DE DÉTERMINATION D'UNE QUANTITÉ DE MATIÈRE FISSILE DANS UNE INSTALLATION

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Application

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Abstract (en)

[origin: WO2022243638A1] The present invention relates to a method and a system for determining an amount of fissile material in a facility, which has good performance, can be used in highly irradiating environments, is non-destructive, and allows the electronic measuring equipment to be placed outside the irradiating areas. This system comprises: - a neutron activation device (3) suitable for being placed in an area (31) of the facility for a predetermined irradiation time, the neutron activation device comprising a matrix (9) of a neutron thermalizing material, preferably of high density polyethylene, incorporating a first neutron activation target (111) in a section between front (33) and rear (35) faces of said matrix (9) and at a first predetermined distance (d1) from the rear face of the matrix (9); - a gamma spectrometry device (5) suitable for measuring the activity of said first target (111) outside said area; and - a computer device (7) configured to calculate a neutron flux emitted by the fissile material from the activity measurement, and to determine the amount of fissile material on the basis of said neutron flux, further using predetermined data relating to the isotopic composition of said fissile material.

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