

CALCULATION OF THE DOSE RATE FOR THE SPENT FUEL ASSEMBLY FROM VVER-1000 TYPE REACTORS

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ABSTRACT

The dose rate from the spent fuel assembly presented in this paper was obtained by using of the SAS2H [1] control module in Version 4.3 of the SCALE code system [2]. The calculations were performed for a VVER- 1000 type fuel assembly with 4.4wt% initial ²³⁵U enrichment and different storage time. The calculations may be divided into two steps: calculation of the characteristics - concentrations of fission products, actinides, neutron and gamma source emissions, and determination of the equivalent dose rate on the surface and at some distance from a single assembly. SAS2H computes neutron and gamma source spectrum and evaluates equivalent dose rates from spent nuclear fuel assembly using a 1-D transport shielding analysis. Obtained results presented in this paper are necessary step in shielding analysis of spent fuel casks and interim storage facilities.

Key words: equivalent dose rate, spent fuel assembly, VVER-1000

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