

**Calculation of Accumulated Energy Ratio in Paraffin Waste Form of
Radioactive Liquid Concentrate Considering Various Packing
Configuration**

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Abstract

Monte Carlo simulations are performed to calculate accumulated energy ratio on various configurations of paraffin waste form, which is required to accurately estimate gas generation in radioactive waste as well as material embrittlement by radiolytic decomposition during disposal or storage. Through the simulation, two factors which mainly affect the accumulated dose are identified: one is a geometric factor according to disposal configuration and the other is a material factor from backfilling conditions. To quantitatively express the effect of these factors, accumulated energy ratio in a single drum to that of various configuration of paraffin waste form is calculated. The geometric factor varies in the range from 0.8 to 1.3, On the other hand, material factor dose not much varied ranging from 1.05 to 1.2.